THE BUILDER

A RECORD OF ARCHITECTURE & CONSTRUCTION

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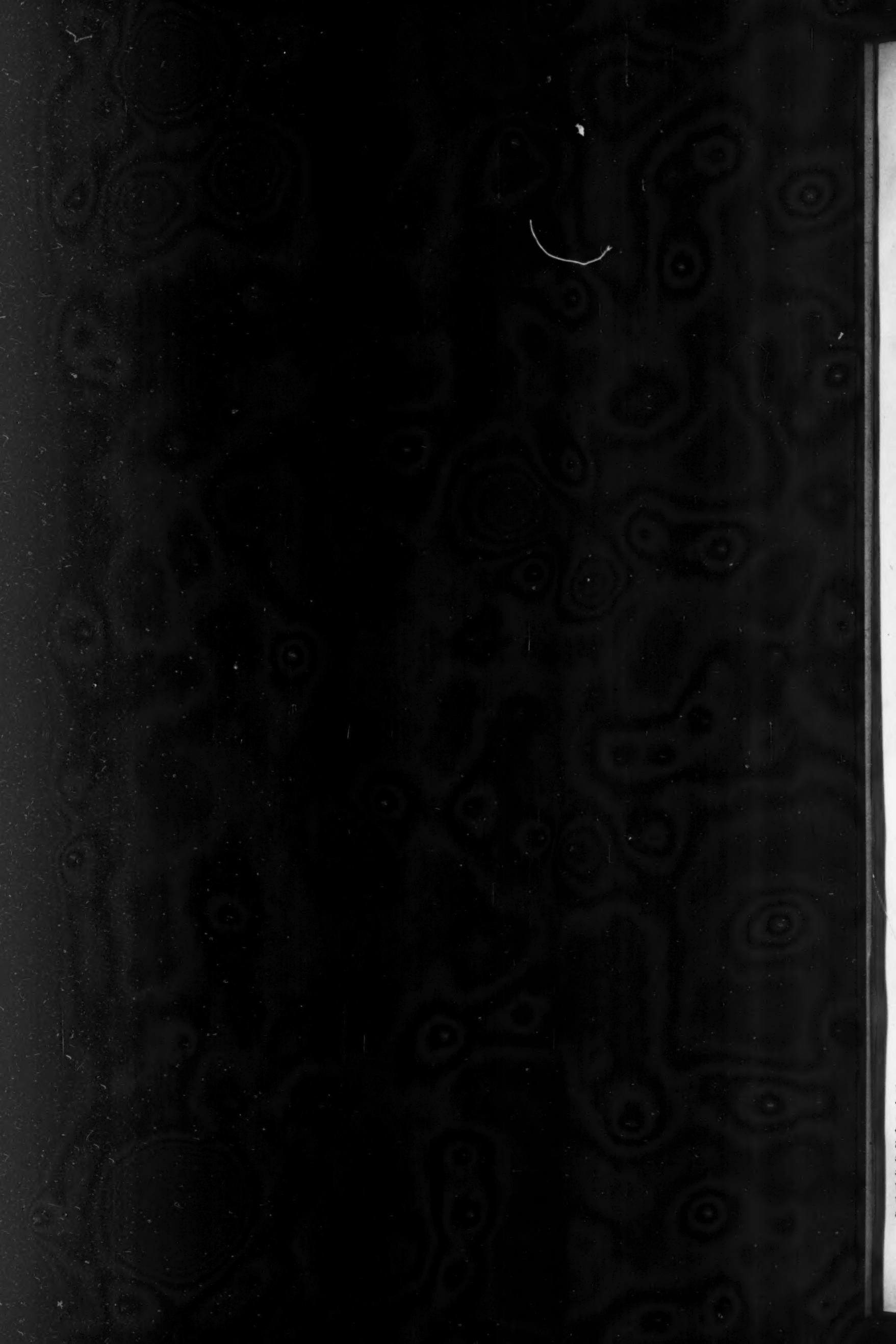


THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXV.—No. 3952 NOVEMBER 1, 1918.

POST WAR BUILDING.—II.

THE question of permanency ought to be considered. It may be essential to erect the buildings quickly to meet certain conditions, consequently a building of a temporary nature might be quite satisfactory until a more normal state of things returned. For public safety and for security to adjoining buildings, sprinkler installations could be installed.

Materials.

If we assume that the Government gives the first priority to housing, no doubt the demand and supply of building material for the purpose will be ascertained. In considering the claims for priority for other classes of building, it should not be forgotten that a different quality of material might be available for these purposes without prejudicing the supply for housing. The use of stone and the manufacture of the better classes of facing brick, glazed bricks and terra-cotta, might be revived. If timber is likely to be scarce, the Government might state the position with regard to the use of asphalte or jointless flooring materials, steel windows, patent glazing, &c. The use of timber might be confined solely to doors and necessary furniture and counters; all other finishings to a building could be postponed for a few years. For constructional purposes, it is impossible to adjust the claims between steel work and ferro-concrete, and it is hoped that the Government will supply the necessary information and recommendations. The use of substitutes has been already mentioned in connection with by-laws, and in view of the probable demand for slating, particulars might be supplied as to the available supply of felt, corrugated iron and asbestos, &c.

Design.

If the need for economy is to be a post-war problem, designers will naturally be expected to consider details of construction with a view to economising material and keeping down the cost of building. Apart from the choice of material available, there would appear to be three points to consider:—

1. The general lay-out to avoid complicated systems of construction
2. The economical use of material.
3. The use of the cheaper classes of material.

In the general lay-out of new works and buildings, care should be taken to avoid complicated systems of construction. For several years there has been quite a mania for large floor areas containing the minimum number of supports. For many kinds of manufacture, this type of construction, though costly, undoubtedly possesses many advantages; but there is no doubt that greater discretion ought to have been used. One has the impression that there is no relation between the building and the nature of the work produced by human beings. Whether a building be 60 ft. by 60 ft., or 200 ft. by 200 ft., there would seem to be no common factor, but simply a craving for few supports. There is no difficulty in providing an economical and uninterrupted space, which can be continued to any length, but why the necessity for horizontal expansion in every direction? The activities of each individual workman do not work in a system of unlimited radials. It requires little thinking to see that it must be a costly item to carry a weight say 50 ft. in one direction, and again to carry it at right angles another 50 ft. It is true that the gross weights on the supports remain practically unaltered, but a system of cross beams has been introduced and a series of point loads have been generated. A great deal of popular rubbish is now being written in the daily papers upon factory design. It is to be hoped that any freak ideas will be put aside until the building trade gets back to normal conditions. The economical use of material has already been referred to under by-laws. The use of the cheaper classes of material will depend entirely upon the Government estimate of the probable total building demand. With common materials, efficient and cheap buildings can be erected, and a fairly high standard of architectural merit may be reached. This is a problem on which architects ought to lead and if they apply themselves to it good results would accrue.

Priority.

The following are a few points upon which the Government might give some information:—

1. Will the present Government restrictions on building operations cease to apply on the cessation of hostilities?
2. Will a further system of priorities be established to control labour and materials?
3. Will prices of materials continue to be largely controlled by the Government, as at present?
4. When the military demands upon labour have ceased, will it be possible to employ labour, as apart from material, upon such work as general excavating, demolishing of buildings, and preparation work, &c.?
5. Will a builder with material in stock be allowed to contract for work without any priority, as against others who would require a priority to enable them to secure labour and to purchase material?

If a priority system is to continue, an indication ought to be given of the degree of importance the Government will consider attaches to various trade developments, and what procedure should be adopted to secure priority for the purpose of building.

Conclusion.

In conclusion, we would expect the Government to issue information upon the following:—

1. Whether it is the intention of the Government to utilise any of their factories and aerodromes by diverting them to private firms; also if their disposal will be considered prior to allowing new buildings to be erected.
2. Whether it is intended to demolish any temporary buildings erected during the war, and what materials would be available from this source.
3. Whether the Government has power and intends to claim any of the buildings which have been erected by private firms out of excess profits for the purposes of the war, in the event of these buildings not being properly utilised or developed.
4. Whether any temporary alteration to the by-laws can be suggested, in order that materials may be economised, substitutes used where possible, and to enable non-permanent buildings to be erected.
5. The extent of the available supply of building materials in relation to the probable demand, and in the event of a shortage in any material, recommendation in regard to economy or the use of substitutes for a few years.
6. Whether it is intended to recommend the immediate release of tradesmen during the period of demobilisation.
7. The principle upon which the priority of various claims will be settled, in the event of the supply of labour and material being insufficient to meet the total building demands.
8. Whether it is intended to maintain the system of controlled prices for materials.

NOTES.

Post-War Building.

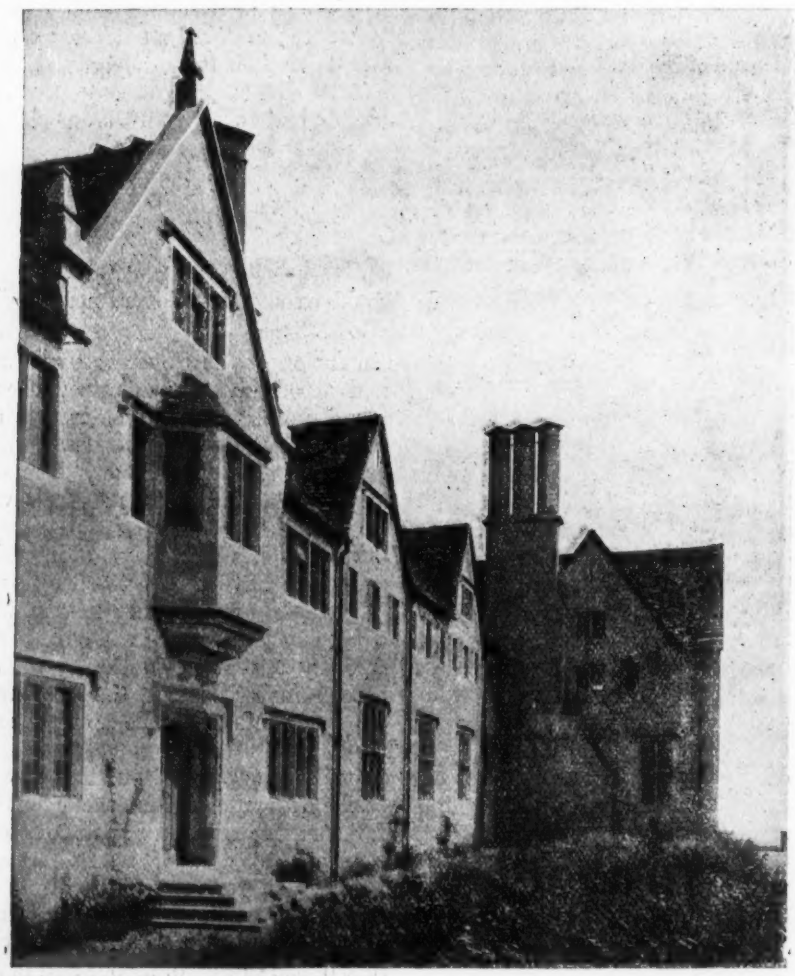
IN reference to the leading article this week on "Post-War Building," we may add it is only fair that we should bear in mind the younger members of the architectural profession who have given up their businesses and partnerships either to join the Forces or by reason of the war. It will take a certain amount of time to switch over the building trade to civil work, and there is every reason to believe that this transitional period will be a difficult one. It is, therefore, essential that everything should be in readiness, as far as possible, when peace is declared. Any information which can assist the various committees now dealing with these problems will also be for the benefit of those who return to professional practice. It is hoped they will consider that in the circumstances what was possible has been done for them in their absence, and that they will be in a position to take up their work with the minimum of delay and inconvenience.

Architects temporarily engaged in Government Offices.

A LETTER appeared in our last issue suggesting the initiation of some scheme whereby all architects, surveyors, constructional engineers, &c., *temporarily* engaged in Government offices could be united in one strong association. We draw attention to the letter, as we consider the proposed federation a wise and timely movement, bearing in mind the abilities of so many architects temporarily engaged in Government offices. The movement is of importance if only because one of the objects is to consider the conditions likely to affect members of the *temporary* professional staff on the conclusion of hostilities, and particularly those relating to housing schemes and other national building work.

Cramming and Book Learning.

THE Examiners in Art under the Board of Education make some timely observations in their Report for 1918. "Both in design and execution, there is a strange inferiority in the work done in the examination as compared with what might have been expected from looking over the Testimonies of Study. In these latter," they remark, "there is evidence of industry, of a good deal of careful instruction, and of not a little meritorious accomplishment. Still, in a large number of cases, too much time seems to have been expended in cramming the students with theories and facts of a practically useless character, and too little time in training them through constant exercises in the constructive principles and planning of good design in the special craft they are learning. The Examiners are of opinion that much of the mere book-learning and attendance at lectures of an unpractical character, now apparently insisted on, might with advantage be dropped, and the time and energies of the students much more valuably expended under the masters' vigilant direction in making intelligent studies of fine examples of their particular craft, and essaying original designs in it of their own. An art or craft can be satisfactorily learned not by merely reading or hearing about it, but by persistently trying oneself to work at it."



Gyde Orphanage, Painswick: East half of South Front from Terrace
MR. P. MORLEY HORDER, Architect. (See page 278.)

The Threatened Appropriation of the Adelphi.

THE meeting arranged by the London Society last week to consider the threatened appropriation of the Adelphi by the Air Board, a short report of which we give on another page, was quite unanimous in passing a resolution asking the Government for an assurance that no further portions of the estate shall be taken over until satisfactory reasons are given. It is now stated that the Government have no intention at present to take any more houses, and while that is satisfactory as far as it goes there will be room for anxiety until the Government have abandoned any such intentions altogether.

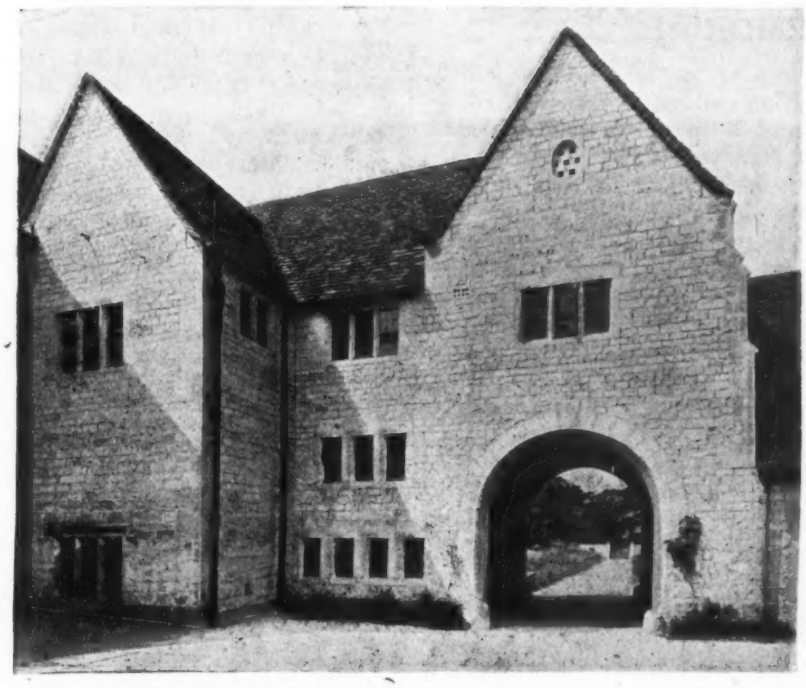
Housing and the L.C.C. Conference.

SOME practical suggestions are made in the memorandum which was prepared by a sub-committee of the Garden Cities and Town Planning Association for the consideration of the Greater London Housing Conference which was held on Wednesday. The housing schemes for London (they sensibly remark) should not be left to individual authorities to prepare, without some consideration of their relation one to another, and they suggest that a systematic inquiry as to the actual need for dwellings should be undertaken for the whole of greater London. This would seem to be a necessary step, which should be taken without delay. An abstract of the memorandum is given on another page.

Germany and Art Treasures.

THE following from Berlin has been transmitted through the wireless stations of the German Government. It is a very naïve and touching expression of the well-known solicitude of Germany for the art treasures of Europe, and we cannot do less than put it on record in our pages:—

> Extensive and very valuable works of art from the regions of Cambrai, Douai, and Valenciennes, partly from museums and partly from private owners, have been received. In order, as far as possible, to remove them from the possibility of destruction of bombardment, the German Army Command, under expert supervision of well-known art connoisseurs, has had them packed after a precise inventory as to them has been prepared. In the meantime, they have been sent away to a place of safety, from whence, after the war, they are to be returned undamaged to their owners. Whilst



Gyde Orphanage, Painswick: Gatehouse from Quad. (*See p.* 278.)
MR. P. MORLEY HORDER, Architect.

the art treasures from Cambrai have been taken straight away to the hinterland, the most valuable works of art from the museums of Douai and Lille were taken one and a half years ago to Valenciennes, where they were handed over to the French Director of the Museum for safe custody, after a richly illustrated catalogue had been prepared by him. The Director of the Museum of Douai offered a passive resistance. The demand that he should place in the basement the good pieces which he was not desirous of sending to Valenciennes, he only partly executed. The valuable picture —a portrait, on horseback, of Louis XIV, by Van der Meulen—he refused to give up. In spite of this, the picture was saved after the Director left Douai at the beginning of September. The important marble reliefs of the Church of St. Pierre in Douai have been sandbagged by the Germans in order to protect them from destruction.

German Art Pillage.

PERHAPS this belated act of consideration for art treasures is not unconnected with the following item of news which has just reached us:—"M. Paul de Lambotte, Director of Art Galleries in Belgium, speaking in London at a meeting of the Guild of Needle Makers, said that it was the intention of Belgium to reclaim for its pillaged art galleries the many Belgian works of art now in the galleries of Germany and Austria. Italy and France, he believed, contemplated taking a like course, and there was reason to hope that in the future the galleries of the countries overrun by the enemy would be restored in great measure to their former positions in the world of art.

The Surroundings of Stonehenge.

AT the interesting little ceremony on Salisbury Plain, when, in the presence of representatives of antiquarian and archæological societies, the generous donor, Mr. C. H. E. Chubb, formally handed over Stonehenge to the nation, Sir Alfred Mond, the First Commissioner of Works, referred to the necessity of protecting the monument and of improving its immediate surroundings. The proper treatment of the setting and the approaches and surroundings of a pre-historic monument of this description, involve a very unusual architectural problem of some difficulty. It is to be hoped that the Office of Works will be competent to solve it. The sunken fence mentioned by Sir Alfred Mond may prove a solution, provided that so much ground is enclosed that the fence may be far enough away from the monument to avoid any suggestion of a moat, or of being part of the original design of the monument. If the adequate treatment of the surroundings require more ground than has been transferred with the monument steps should be taken to acquire it; and there should be no hesitation in diverting the public road if the general lay-out demands it.

The Policy of Admission Fees.

IT is understood that the donor of Stonehenge made it a condition of his gift that the revenue now derived from the admission fees of visitors should be devoted to charitable purposes for the duration of the war. This condition will, of course, be respected, but we hope that after the war is over the position will be reconsidered. Apart from the question whether in this particular case the revenue will pay for collection when the camps in the neighbourhood are dispersed, it is perhaps open to doubt whether it is good policy to penalise the public for visiting our historic or pre-historic monuments. If such monuments as Stonehenge have an educative value, surely the right policy is to entice the public to visit them, even to the extent of affording such facilities as will attract those most in need of a mental or imaginative stimulus. It hardly seems wise directly to discourage them by making them pay. This policy is not adopted at our national museums and picture galleries, and there seems no need to adopt it at Stonehenge.

American Soft-woods.

THERE is a little exhibition of American Soft-wood timber, arranged by the American Government, at the R.I.B.A. premises, No. 9, Conduit-street, which might be visited at the present time with advantage. The samples of timber on view are extensively used in America and Canada, and are known out there as Douglas Fir, Californian Redwood, Californian Sugar pine, Western White pine, and Southern Yellow pine. Each of these woods is partially manufactured into joinery—doors, framings, panellings, sashes, floorings, &c. The samples, with perhaps the exception of the Redwood, were being imported in increasing quantities before the war—especially the Oregon pine specie, which could be obtained in very wide widths and long lengths. It is now evidently the intention of the American Government to make their woods still better known and to compete with the White Sea, Swedish, and Baltic red and white woods in replacing our diminished stocks after the war. We think the opening up of this trade is good for our Colonies and Allies. As a war economy in building the Redwood might be used in many cases as a substitute for hardwood. This wood takes polish well, and is noted for its even grain, freedom from knots and blemishes; and as the trees vary from 150 ft. to 350 ft. in height, and from 3 ft. to 15 ft. in diameter, the boards may be had in any widths and length.

House at Ealing.
MR. R. ATKINSON AND THE LATE CAPTAIN G. L. ALEXANDER, Architects.

THE EMPIRE WAR MEMORIAL.

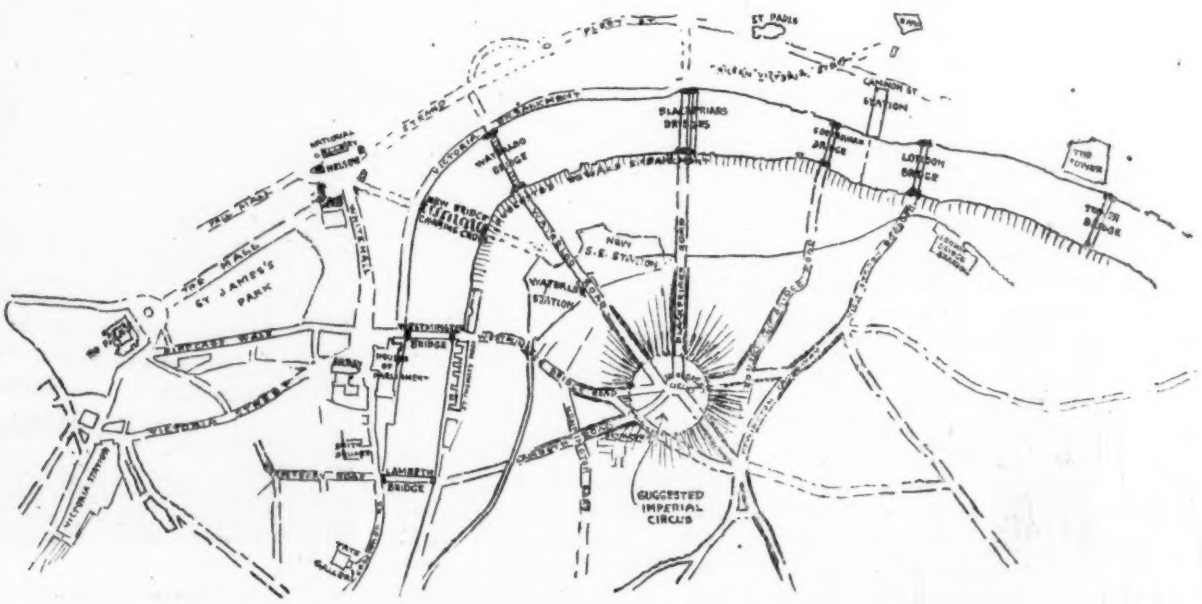
WE give elsewhere a somewhat detailed description and several illustrations of Major Pawley's scheme for an Imperial War Memorial, as we think this much is due to proposals of such magnitude which have apparently obtained the support of a strong committee of public men, as well as some well known artists. The Committee (may we assume ?) have given these proposals careful thought, otherwise they would scarcely allow their names to be used in furtherance of the scheme, but we propose to set before them some considerations which may have been overlooked, and which appear to us vitally to affect the whole question, though, in doing so, we merely anticipate the necessity for a thorough inquiry into the character of the Imperial War Memorial which is finally to be carried out, and also the question of the quality and character of its design. The war, we hope, is in its last stages, and it will soon be necessary seriously to consider all suitable proposals, and we believe the time has already come to form a properly elected Committee to deal with the whole question.

Major Pawley's scheme is really a rebuilding scheme for the City of Westminster, and whether it is a good or bad scheme does not concern us now. What does concern us is whether a rebuilding scheme, however ambitious, is a suitable form for the Imperial War Memorial to take. The Imperial War Memorial, it seems to us, should be an endeavour to express first and foremost, Liberty, Freedom, Truth, Justice, Triumph ; it should be an expression of the Empire's gratitude to the countless men and women who have suffered in this great conflict between right and wrong ; it should express thankfulness and joy in the victorious end, and, finally, our reverence for those who have died in a great cause. Major Pawley's realisation of this is confined to a shrine, which is the only non-utilitarian building in the whole conception, and is in no way an integral part of it, for, if desired, it could be carried out quite independently of the other parts of the scheme. It may be urged that Major Pawley, in his rebuilding scheme, does more than this : he shows sites for various public buildings, and even goes so far as to present designs for them ; but we cannot believe these are given with any other object than to suggest what can be done on the sites provided. In the event of the general rebuilding plan being adopted, the public buildings to be erected must surely be the subject of competition amongst architects, and obviously, therefore, the elevational treatment of any buildings to be placed on the sites is a subsidiary matter, and the scheme, as a rebuilding scheme, stands or falls, like any other rebuilding scheme, on the plan.

As we have already said, it is not now a question of the merits of any particular rebuilding scheme, though Major Pawley's is open to drastic criticism ; but we may point out that there are other London replanning proposals which are before the public of equal importance to the rebuilding scheme submitted by Major Pawley, as, for instance, the reconstitution of the whole area about the British Museum, the adequate treatment of Trafalgar Square, the very much greater and much needed improvement involved in the proper development of London on the South side of the Thames between Westminster and London Bridges, and the important and much-discussed Charing Cross improvement. In this connection we do not forget a scheme for an Imperial Memorial Circus, something on the lines of the sketch which we give below.

We welcome ideas and suggestions for public improvements and for the town planning of congested areas of London, but these are all questions of general improvement and utility which would sooner or later have been dealt with and ought not to need the war fervour to stimulate and find the money for them. The question which must be asked about any Imperial War Memorial is whether it will, in some absolutely distinguished and significant way, symbolise for us the great issues of the war. It must be a visible and inspiring object for the whole people. It must not be diffuse, but concentrated in effect, and cannot typify so great an epic by a mere compilation of many and varied details. It must be a fine piece of symbolism, illustrating the abstract qualities of high endeavour. It is a subject for art in its finest and most expressive form. In such a memorial we look for the symbolical glorificaton of that heroism which has won us freedom. Can any scheme with a utilitarian basis, or any patchwork of many separate schemes, compensate for the lack of one great and inspired expression ?

A satisfactory memorial of enduring significance must have an idea which will appeal in a directly broad and telling way to the whole people. If an Imperial War Memorial does not give occasion for the finest expression of art, we may well ask, What can be the use and value of art ? Consider for a moment how the puny figure of Nelson on its ridiculous column in Trafalgar-square epitomises the maritime glory of our Empire, and how feeble a comparison with even so poor a monument would be the creation of any number of boulevards, bridges, or squares. We have dealt with this subject in one of its aspects, but have still to speak of it as a design for city development apart from its function as a war memorial. We hope some of our readers will favour us with their views on the scheme.



Suggested location for a great Imperial Circus in the heart of London.

GENERAL NEWS.

Monumental Brasses.

In view of the suitability of monumental brasses as one means of meeting the extensive demands for memorials which have arisen out of the war, a selection of rubbings of well-known English brasses from the Museum collections has been arranged in Room 135 of the Victoria and Albert Museum. The rubbings have been classified under the headings Military, Ecclesiastical, Civil and other Costume, and illustrate the development of this form of memorial in England from the thirteenth century onwards. A few from modern brasses are also shown, including examples from a series now in process of erection upon an "Eleanor" cross at Sledmere, Yorks, in memory of officers and men from that village who have fallen during the war. It is hoped that this exhibition may give an impetus towards reviving the use of a form of memorial which is at once distinctively English in character and admirably suited for the purpose in view.

The National Trust.

The Executive Committee of the National Trust for Places of Historic Interest or Natural Beauty, 25, Victoria-street, S.W. 1, announce some recent gifts which have been made to the nation through the Trust. One of these—the Dodman on the Cornish coast—was presented to the Trust by "a friend who desires to be anonymous." Another gift is Shirehampton Park, about 90 acres, overlooking the River Avon near Bristol, the gift of Mr. Napier Miles, of King's Weston. It consists of a number of glades abounding in fine trees, and the higher parts of it command beautiful views over and across the Avon, towards the Leigh Woods, already the property of the Trust. A further gift is a large tract—about 7,000 acres—of Exmoor.

The R.I.B.A. Record of Honour.

FALLEN IN THE WAR

Wilfred Stuart Gorringe (Associate), killed in action last June; Private Gilbert John Frank Hookway, Cambridgeshire Regiment (Licentiate), killed in action in France; Second Lieut. Oswald Massey Samson, R.G.A., died of wounds (son of Mr. C. H. Samson, and formerly Assistant Master at Rugby); Captain John Algernon Edmund Toone, O.C. 3rd Australian Div. Pioneers (Associate), killed in action.

MLITARY HONOURS.

Captain P. H. Keys, R.E. (Associate), promoted to Acting Major, and awarded Bar to the Military Cross for gallantry; Lieutenant T. F. W. Grant, R.E. (Associate), awarded the Military Cross.

PROMOTION.

Mr. H. M. Spence (Associate) has been gazetted Second-Lieut., R.E.

Science for Industry.

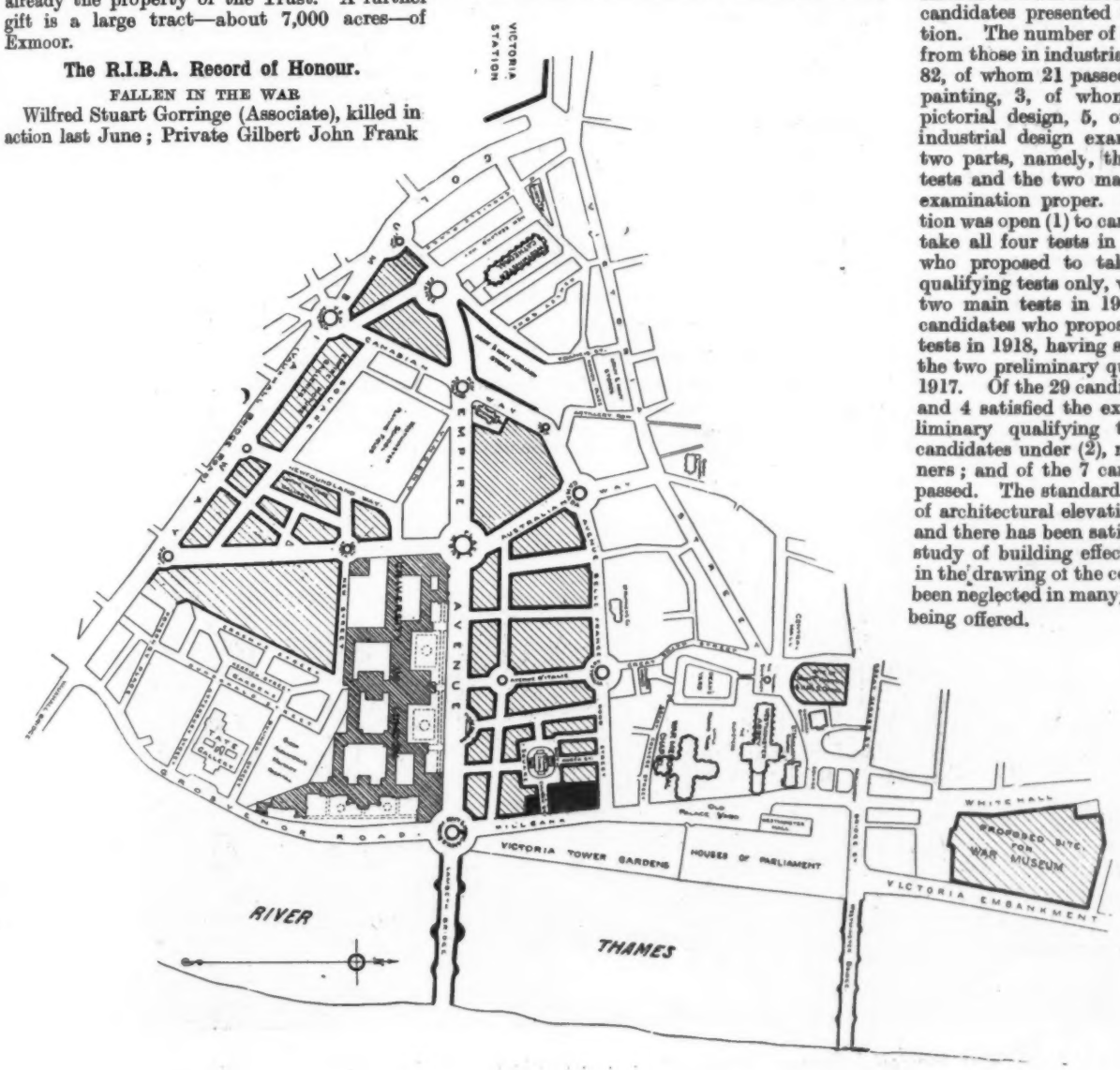
A scheme which has been drawn up for the post-war development under Professor W. A. Bone, of the Chemical Technology Department of the Imperial College of Science and Technology at South Kensington, involves an outlay estimated at £100,000 for buildings and equipment and a cost of not less than £10,000 a year for maintenance and working expenses. It is proposed that the Department shall be organised in four principal sections. The first will be concerned with the general technology of fuels, carbonisation of coal, distillation of wood, chemistry of coal tar and its derived products, chemistry of gases and technical gas catalysis, and refractory materials used in furnace construction and the manufacture of ceramics, glass and cements. In the second, or Chemical Engineering Section, facilities will be provided for the advanced study of the operations required in chemical manufacture, including factory economics and organisation; while the third will cover the principal applications of electricity in chemical industry. In the fourth section three groups of products will be dealt with.

Building after the War.

Mr. G. H. Roberts, Minister of Labour, opened the new London Building Trades Employment Exchange in Tavistock-street, Covent Garden, a few days ago. Lord Burnham, who presided, said that the exchange marked a definite step forward in industrial reconstruction. The building trade was the premier trade of London, and at the end of the war the demand for labour in it would be 50 per cent. above pre-war numbers, not only to cope with arrears, but also to carry out a programme of national and municipal importance. Mr. Roberts said that in 1913, when the Aldwych Exchange was first opened, there were 7,417 registrations and 4,053 positions filled. Up to October 10 of this year the number of registrations since January 1 had been 18,575, and employment had been found for 17,920 men. Unless we sweetened the relations between employers and employed, recovery and expansion after the war would be impossible. The building trades would be very active when peace returned. Leeway would have to be made up, and more important than that, people would no longer tolerate the sort of dwellings which were considered good enough before the war. We should have to give to our fighting men an environment worthy of their great achievement.

Examinations in Art.

We have received from the Board of Education the Examiners' Reports for 1918, on the examinations in art. Examinations were held in 1918 in drawing, painting, pictorial design and industrial design respectively. A modelling examination was announced, and arranged, but no candidates presented themselves for examination. The number of candidates in 1918, apart from those in industrial design, was, in drawing, 82, of whom 21 passed, 1 with distinction; in painting, 3, of whom none passed; and in pictorial design, 5, of whom 3 passed. The industrial design examination is divided into two parts, namely, the preliminary qualifying tests and the two main tests constituting the examination proper. This year the examination was open (1) to candidates who proposed to take all four tests in 1918; (2) to candidates who proposed to take the two preliminary qualifying tests only, with a view to taking the two main tests in 1919 or 1920; and (3) to candidates who proposed to take the two main tests in 1918, having satisfied the examiners in the two preliminary qualifying tests in 1916 or 1917. Of the 29 candidates under (1), 5 passed and 4 satisfied the examiners in the two preliminary qualifying tests only. Of the 12 candidates under (2), none satisfied the examiners; and of the 7 candidates under (3), none passed. The standard attained in the drawing of architectural elevations shows improvement, and there has been satisfactory work indicating study of building effects. On the other hand, in the drawing of the columns these effects have been neglected in many exercises, only diagrams being offered.



Rebuilding Scheme, Westminster. Proposed by Major Pawley as an Imperial War Memorial.

CORRESPONDENCE.

L.G.B. and R.I.B.A. Cottage Competition.

SIR,—In the issue of the *Builder* for October 18 you illustrated plans of each floor and a perspective view only of the premiated designs of the Local Government Board and the Royal Institute of British Architects' Cottage Competition for the Midland Area, and in your note you refer to them as "among the best contributed in the whole series." Will you allow me to make a few comments upon them?

In Class A the span of the roof of the narrow-fronted houses is some 6 or 7 ft. wider than that of the wide-fronted houses, but the perspective appears to show the roofs of both houses as of equal span, unless the intention is to finish the roofs of the narrow-fronted houses with a wide and costly lead flat on top, which would be very far fetched for houses of the character in question. The bedrooms on first floor are formed partly in the roof space. Assuming, therefore, that the walls are not less than 5 ft. high to the springing line of roof, which is little enough, it appears from the perspective that the bottom of the windows would be between 5 to 6 ft. off the floor level. The scullery of the wide-fronted houses would be badly lighted owing to the lighting wall being kept back to admit of a covered way to W.C. and coals.

When the bath is being used the scullery, larder, coals, W.C. and back entrance are entirely cut off from the rest of the house, and the position of the bath would require an excessively long length of waste pipe to pass through the setting of copper and thence through the larder, and would have to be laid under the floor. No fireplace is shown in the scullery to enable cooking to be done there in the hot summer weather.

In Class B my comments on Class A, as to the span of the roofs and the height of the windows off bedroom floors, apply also to this design. The position of the outside surface sinks to take the waste from the scullery sink of the narrow-fronted houses would have to be right against the front entrance door.

The bathrooms of the narrow-fronted houses have no outside wall and, therefore, no window for lighting and ventilating. It is also placed over the ceiling of living rooms, and the bath would require an exceptionally long length of waste pipe between the ceiling and floor boards to discharge outside the back or front walls. The bathroom of the wide-fronted houses appears to be about 13 ft. 6 in. long and only 3 ft. 6 in. wide. The bath would have to be longways with the room, which would leave no space for cleaning the walls and the floor under, or to make repair to pipes, and the only way to get into the bath would be from one end, and that would have to be the end where the taps would be placed. The copper in scullery of the wide-fronted houses appears to be in a short passage about 2 ft. wide, giving no elbow room.

The dust-bin under the roof to W.C. and covered way to coals is not ideal.

My comments on Class A, as to bath when being used, apply also to this design, and in both instances there are no means of access between the bath and the bedroom, excepting by passing through the living room, which is objectionable.

In Class C no fireplace is provided in scullery for cooking in hot summer weather. The ground floor covers as much space as would be required for a house with three bedrooms. The twin-hipped roofs, the two separate chimney breasts gathered into one stack at top, and the large amount of outbuilding appear to me costly for a house of two bedrooms only, but no doubt it is a conveniently planned and picturesque block.

CHAS. J. DAWSON.

Relationship between Employer and Employed.

SIR,—I am pleased to see the letter by Mr. Firth, and to know that others are thinking on the same lines as my letter suggested. Much good will be accomplished by a fair discussion of this question. Mr. Firth has not, however, quite caught the spirit in which I wished my remarks to be understood. It is not a question of squeezing more out of the men for the money paid, but of making a special study of the men, the results of which would be a better yield of service.

Take a case. A joiner in private life, moving in a good social circle, refined, intelligent, and, as is often the case in these circumstances, sensitive. He goes to a job or shop where the foreman has only one method of control and that the driving, bullying one. This man never gives of his best; while different treatment would have the effect of securing the best that is in him.

I quite agree as to the methods which may be adopted to secure labour; but whatever may be done or whatever rate of pay may obtain it does not alter my standpoint at all.

To understand a man and surround him with an atmosphere congenial to his temperament means to secure better conditions for him and a more profitable return for the employer.

WORKS MANAGER.

Glasgow School of Art.

At the annual general meeting of the Governors of the Glasgow School of Art, Mr. Patrick S. Dunn was re-elected chairman and Sir John J. Burnet, R.S.A., Mr. Hugh Reid, and Mr. John Henderson vice-chairmen.

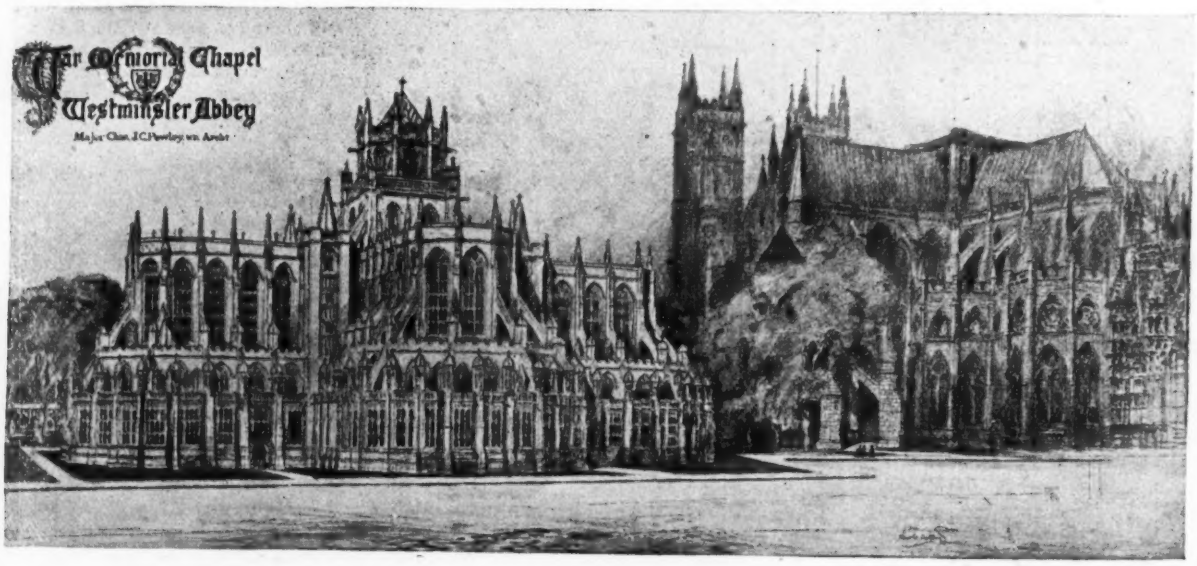
EXHIBITIONS OF THE WEEK:

Leicester Galleries.—Pastels and Statuettes at Messrs. Derry & Toms'.—The Royal Society of Painters in Water Colours' Winter Exhibition.

THE latest exhibition at the Leicester Galleries of the work of Harold and Gertrude Harvey has considerable interest. That contributed by Mrs. Harvey consists of landscape, in which the medium appears to be tempera; and this has enabled her to put in the foreground with a strong 'impasto," using her colour quite thick, and treating the sky and clouds with a light clear wash. This treatment is very effective, and the cloud effects obtained are often boldly handled. Harold Harvey's work in oil has the qualities of clear fresh colour and good drawing. In this and the choice of subject he recalls to us the art of Laura Knight, which was recently filling these same rooms; for the scenes and figures (though we are not aware of their actual *locale*) might have been drawn from the artist's own friends, relations, and village models in some little town upon the Devon or Cornish coast. The figures are generally silhouetted against the sky line, and even in portrait figures often against a background of creamy white. All is cleanly drawn, precise and definite, but there is a lack of atmosphere and of suggestion.

The exhibition in Messrs. Derry & Toms' Gallery in High-street, Kensington, of pastels and statuettes is shortly closing, and there will be no further exhibitions at these galleries until Christmas is over. Pastels are admirably adapted for landscapes, and, in fact, some artists—as, for instance, the late Edward Stott—make it the scaffolding for their finished work; but it can also stand very well upon its own merits in landscape, just as much as portrait, and this is the case with the work of Mr. H. R. Wells in this gallery. Best here are his views of Holland, and those twilight effects in which the suggestive quality of pastel has helped the artist. The statuettes are not numerous or important, though they include small bronzes by sculptors of such standing as Mr. Drury; and the radical defect of this gallery is the lighting, which needs much more careful hanging and arrangement if a satisfactory result is to be obtained.

The Royal Society of Painters in Water Colours opened its Autumn Exhibition on Saturday last in its own galleries in Pall Mall East. The work exhibited, which is of a very high technical quality and interest, includes water-colours by Robert Little, Thorne-Waite, Lamorna Birch, Shepperson, Russell Flint, Murray Smith, Robert Allan and the late Lionel P. Smythe, R.A. Mr. John Sargent, R.A., sends a study of "Sketchers," which is bold alike in its colour and handling. We reserve a full account of this important winter exhibition for our next notice.



War Memorial Chapel. By Major C. J. C. PAWLEY. (See page 278.)

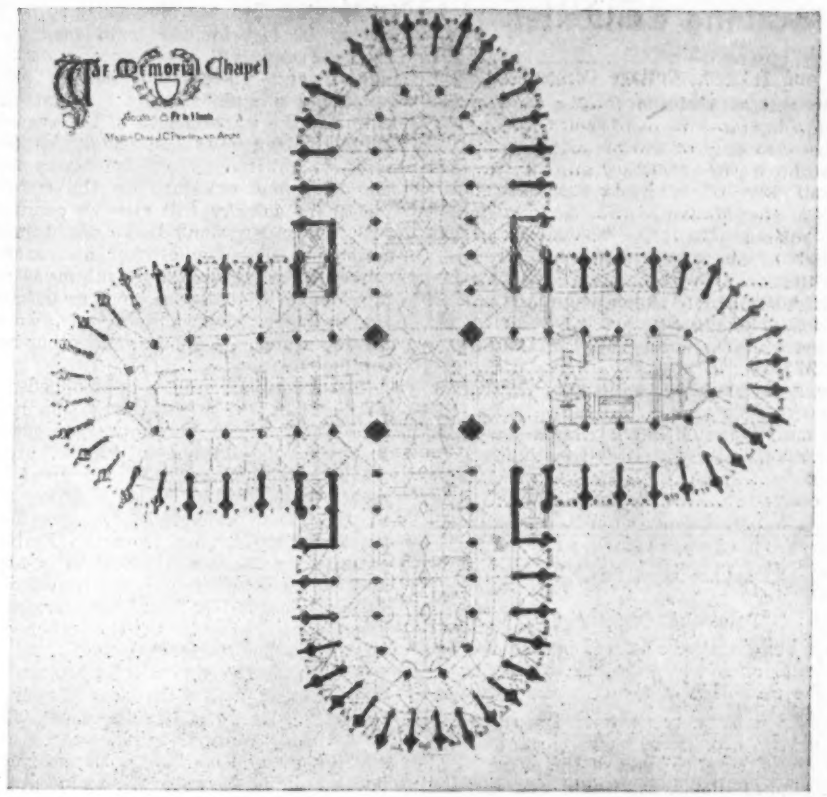
PROPOSED NEW CITY PLAN FOR MANCHESTER.

A MEETING of the Royal Manchester Institution was held on the 10th ult. at the Grand Hotel to consider a proposed new town plan for the city. In the course of the proceedings Mr. Gordon Hemm, Associate member of the Town Planning Institute, addressed the meeting and made the following proposals :—

That the Committee of the Institution be formed into a Civic Society, which should be represented by a town planner, who would be responsible for the general working out of a comprehensive plan, and, if possible, obtain the assistance of the city surveyor and engineer when their services are required. The Civic Society would act in an advisory capacity in the control of the scheme, in a general way, just as the Commissioners do in American town planning. It is also proposed to seek the advice of this Committee on all the larger questions of public improvements, as the plan develops stage by stage, and to formulate a general scheme of improvements, with which all local improvements will be co-ordinated. City planning is a prime need of our city ; and when we realise the haphazard way in which our town has gradually developed in the past, and how former town planners (if we may call them so) only considered their momentary needs, and did not give the slightest thought to future expansion, surely it is high time to formulate a scheme for immediate rectification. It is almost inconceivable, when studying the ordnance maps of our city, that such essential elements of town planning should have been overlooked by the planners of the past. Irregularities in the location of the streets, non-axial treatment by the termination of streets into places, noble *façades* hidden away instead of being allocated so as to exhibit their architectural qualities. Then under housing there is that awful, squalid slum-zone, which is so prevalent in every direction of our town. Surely this last state of affairs calls for some remedial action, and it is only by detailed investigation, in the form of a comprehensive reconstruction scheme, that any hope of rectification can be realised. The main features of the comprehensive plan might be dealt with in the following and general way :—

1. To show the movement of population. These data are charted, so as to show the movement of population in small areas, thus rendering it possible to form a basis by which to illustrate the effect of specific improvements.

2. Plans should be prepared, showing by "zoning" the closely-built-up town sections, the development and change of commercial, industrial and residential districts, and the total area devoted to industrial buildings.



(See page 278.)

3. Transit-maps, including railways, canals and the road systems. Detailed investigations should be devoted to this section, as the transit problem will play a prominent part in the future city plan.

4. A plan should be prepared showing the location of factories and other works. The planning for the housing of the community will be largely determined by the future compulsory location and extent of the industrial districts.

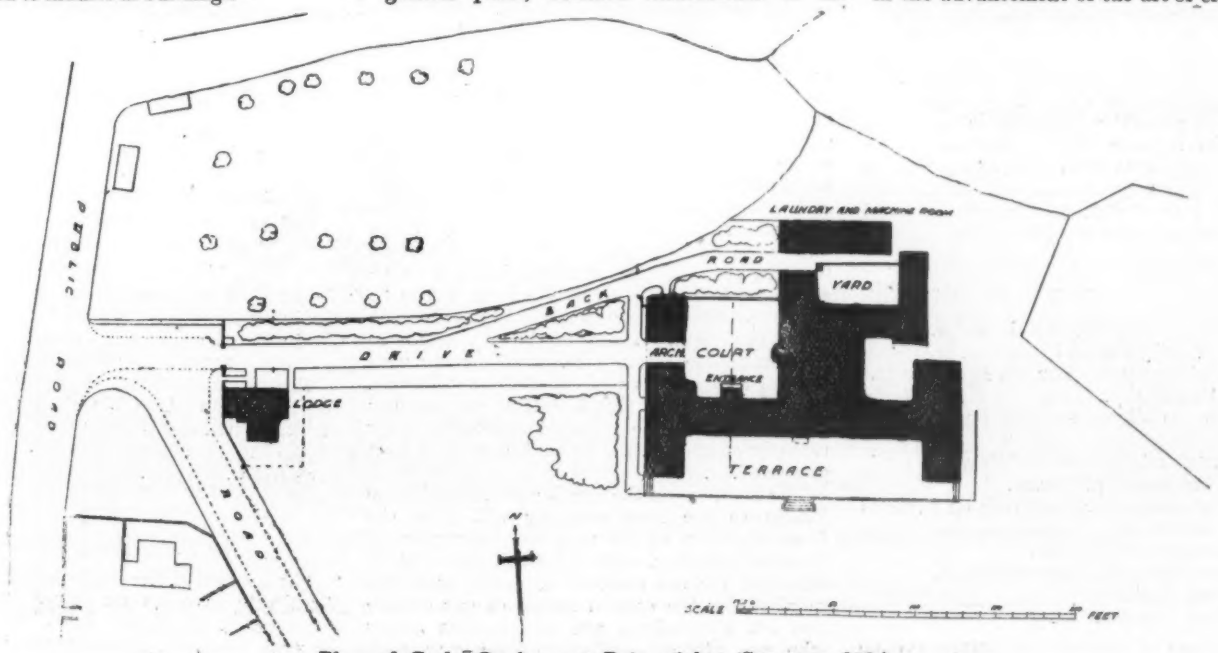
5. A comprehensive park system should be provided for. Manchester is certainly well served with municipal parks, but they need linking together by means of park ways and park highways, also the acquisition of Nature reserves.

6. As to the housing problem, careful survey of existing conditions should be made, showing the density, health statistics, death rates, &c., before embarking upon any drastic measures for the demolition of existing property.

7. Central improvements should play an important part in this project. Based upon the general plans, detailed elaborations of the various sections needing improvement should be executed, and to a fairly large scale. The present central area is extremely illogical as regards the disposition of its streets and places, and will require considerable readjustments and widenings at many points before a satisfactory scheme can be accomplished.

The financial question must be considered in estimating the expense of reconstruction. This is a very important point, as without financial support the most complete suggestions will remain unexecuted. As regards the method of levying rates, it is suggested that a system be adopted similar to that practised in Sydney, N.S.W., and which would, to a great extent, cover the cost of reconstruction viz., by a rate of say 4d. in the pound on the capital value of the land.

Finally, I would draw your attention to the idea of presenting the scheme as an illustrated compilation, accompanied by detailed reports' and published at a nominal price. Such a work would create further interest and would assist in the advancement of the art of civic design.



Plan of Gyde Orphanage, Painswick. (See page 278.)

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ILLUSTRATIONS.

Painswick Orphanage.

These buildings were started just as the war broke out and were allowed to be finished with the exception of the entrance lodge and the general lay-out of the grounds.

It was no easy task to adapt the typical Cotswold style to the exigencies of institutional requirements. Orphanages and asylums are generally rather restless objects on the landscape and it is fortunate that the beautiful vernacular architecture of the Cotswolds at Painswick has been so faithfully extended to the site above the little town. Painswick stone has been used for the entrance building and old stone tiles for the roofing. The little entrance court, approached through the arched entry, is a feature of the planning, also the broad south terrace looking down over Painswick. The orphanage is built and endowed by funds left by Edward Gyde, who also gave the delightful cottage almshouses on the road leading up to the orphanage designed by Mr. Barnsley. Mr. P. Morley Horder, F.R.I.B.A., was the architect.

Proposed Empire War Memorial.

WE take the following from the description which we have received from Major Pawley of his proposed Empire War Memorial :—

The site comprises a large section of the western portion of the ancient City of Westminster, adjacent to the Houses of Parliament and Westminster Abbey, extending from the old Lambeth Suspension Bridge to the Tate Gallery. The Empire Embankment forms the base of a triangle bounded on the north side by Victoria-street and on the south side by Vauxhall Bridge to the apex at Victoria Station. Nearly the whole of the area embraced in this triangle has been replanned with the main artery running from the base of the Empire Embankment bisecting the triangle with a roadway to be called the Empire-avenue, 120 feet wide, as shown in the birdseye sketch and plans. The main portion of the proposed war memorial may be described under the following headings :

1. The Construction of the Empire-avenue.
2. Columbian Way Widening (present Vauxhall Bridge-road).
3. The Empire War Memorial Bridge.
4. The Embankment and Gardens.
5. The University of London : suggested new Central Buildings.
6. The King's College : suggested new Central Buildings.
7. The Arts and Science Buildings.
8. The War Memorial Shrine.
9. The Sculptured War Memorials on Avenues allotted to Allies.
10. Shakespearean Theatre.
11. Picture Galleries, Vincent-square.
12. Concert Hall.
13. Hall of Nations.

It is proposed to continue the Empire-avenue in a straight line from the Empire Bridge 120 feet in width, the side walks to be 15 feet, leaving 90 feet for the main roadway. The Empire-avenue will be constructed on the most modern and up-to-date scientific principles, embracing a main subway constructed longitudinally the whole length of the avenue, with branch subways at convenient intervals for access to and from the public footways, to avoid the dangerous crossings on the street level. The main subway will also be connected up with the underground lavatories, tobacco and newspaper shops, and other necessary public conveniences. Secondary subways will be provided in a similar manner as described for the drainage, electric light, gas, water, and heating mains, telephones, and other necessary equipment.

The Empire-avenue is approached from the Embankment in a crescent so planned as to form at the entrance an impressive, magnificent trophy to be erected in bronze, granite, or marble, to commemorate the great achievements of the British Navy, a fitting approach to the other memorials. . . . The total length of the avenue from the Embankment entrance to the Victoria Station is 4,000 feet, and has an available building frontage on both sides of about 6,000 feet, after allowing for the intervening openings of the other principal streets leading therefrom. . . .

The Empire-avenue will be broken by three large circular memorial spaces of over 300 feet diameter, so planned that these form the centre of separate memorial trophies to be embodied and designed to conform with the magnificent public buildings so as to form an integral portion of the whole conception. So far (and subject to further consideration) the three spaces denoted on plan are Mons-place, in commemoration of the glorious deeds of our "Contemptibles"; the second memorial space is allotted to our glorious ally the French nation; and the third memorial space at the junction of Empire-avenue and the Vauxhall Bridge-road, to the noble Italian nation. The Empire-avenue will continue its course as shown on the plan through Eccleston-street and Gillingham-street over the Grosvenor Bridge into Buckingham Palace-road. It is proposed at the juncture of Vauxhall Bridge-road to proceed along Gillingham-street over Eccleston Bridge to Buckingham Palace-road and St. George's-road. It is suggested that the Vauxhall Bridge-road should be renamed Columbia-avenue, and widened throughout its whole length from Victoria Station to Vauxhall Bridge. The whole of the new frontage on the avenue to be reserved for public and Government offices. The other main arteries as shown on the town-planning scheme, together with the memorial spaces and circuses of over 300 feet diameter, will be dedicated for monumental trophies by the Governments of our own Dominions beyond the seas and our Allies. The same conditions in respect to the Empire-avenue will apply to these equally important avenues as regards construction and development. We have shown by the drawings the general design suggested for the public buildings on the sites indicated, and it is intended that the whole of the buildings throughout the main subsidiary avenues should be subject to a unified and co-ordinate treatment as regards height, projection, and general characteristics of the various blocks to be constructed; a certain freedom of treatment and individuality to be allowed for the purpose of the buildings to be erected preserving the general character throughout. The main fronts to be restricted to Portland stone throughout, granite being used for the lower floors under certain restrictions. It will be observed that in setting out the new streets nearly all the principal modern buildings recently erected on the present area have been preserved. . . .

The frontage on the north-west from Empire Bridge to the Mons-crossway will form the front elevation of the proposed University of London buildings, and the south side will be allocated for the erection of public buildings required for the central homes of our science and art institutions, and the various bodies who are already desirous of securing such fine positions. . . . The University of London would have a frontage of over 900 feet to the River Thames Embankment and a return frontage to Empire-avenue of about 1,500 feet, embracing an area of over 15 acres. . . .

Designs and plans for the war memorial shrine proposed to be erected, as shown in the birdseye view, have a frontage on the eastern side to Old Palace-yard and on the south side to Great College-street. This site is at present occupied by old office buildings belonging to the Ecclesiastical Commissioners, which, prior to the war were to be demolished, and the site of the same was offered to the public on building lease for the erection of other offices, so there should be no difficulty in obtaining possession of this site. The shrine as designed is in the shape of a Maltese cross, and the measurements from the north to south, east to west, is 300 feet. The height of the main building, exclusive of the lantern, is about 100 feet. The design of the building is arranged to afford 78 recesses in the form of small memorial chapels. It is intended that this shrine shall be in every way unique, as a commemorative memorial of the great sacrifices made, and that its dedication and use be entirely devoted as a mark of national gratitude to the great heroes whose memory the fane will perpetuate. No more appropriate site could be found for the crowning gift of the nation than under the shadow of the historic Abbey and the Chapter House (the first meeting place of British democracy) and the present Houses of Parliament. . . .

This portion of the town planning scheme (War Memorial Bridge) comprises the setting back of the present frontage opposite Lambeth Palace and Lambeth Parish Church, and the widening of Lambeth-road, extending from the War Memorial approach along the eastern end of the Lambeth-road to St. George's-circus. The advantage of this improvement will be the linking up of the present L.C.C. tramway system on the Surrey side with the already existing service in the Vauxhall Bridge-road at Victoria. We suggest that the proposed War Memorial Bridge should be designed and constructed under the supervision of a special committee appointed for that purpose, in order that the design and the memorial work in connection therewith should be the result of the best efforts of the nation, and vie in its magnificence and artistic conception with any existing monumental bridge, and thus form a grand, imposing and beautiful approach from the east to the Empire-avenue. . . .

As part of the rebuilding scheme for the City of Westminster it is proposed to reserve a building site fronting Vincent-square for the erection of War Memorial Picture Galleries. . . . As part of the town planning project it is proposed to erect on the site a War Memorial Concert Hall. . . . A site for the Shakespearean National Theatre is also reserved.

MEETINGS.

MONDAY, *November* 4.

The Royal Institute of British Architects.—The President, Mr. H. T. Hare, to deliver the opening address of the session. 5 p.m.

The London Society.—Mr. F. J. Winkley on "Old Southwark," with lantern slides. 4.30 p.m.

TUESDAY, *November* 5.

The Institution of Civil Engineers.—First Ordinary Meeting. Address by Sir John A. F. Aspinall (the President), and Presentation of Medals awarded by the Council. 5.30 p.m.

The Industrial Reconstruction Council.—A Conference on "The Place of Conciliation and Arbitration in the Whitley Scheme," in the Hall of the Institute of Journalists, 2 and 4, Tudor Street, E.C. 6 p.m.

The Demolition of Soissons.

The *Journal* of the Royal Institute of British Architects contains an interesting article by Professor C. H. Moore, A.M., Hon. Associate. Several illustrations are given, showing the destruction by the Germans.

PHOTO: ARTHUR TEDMAN.

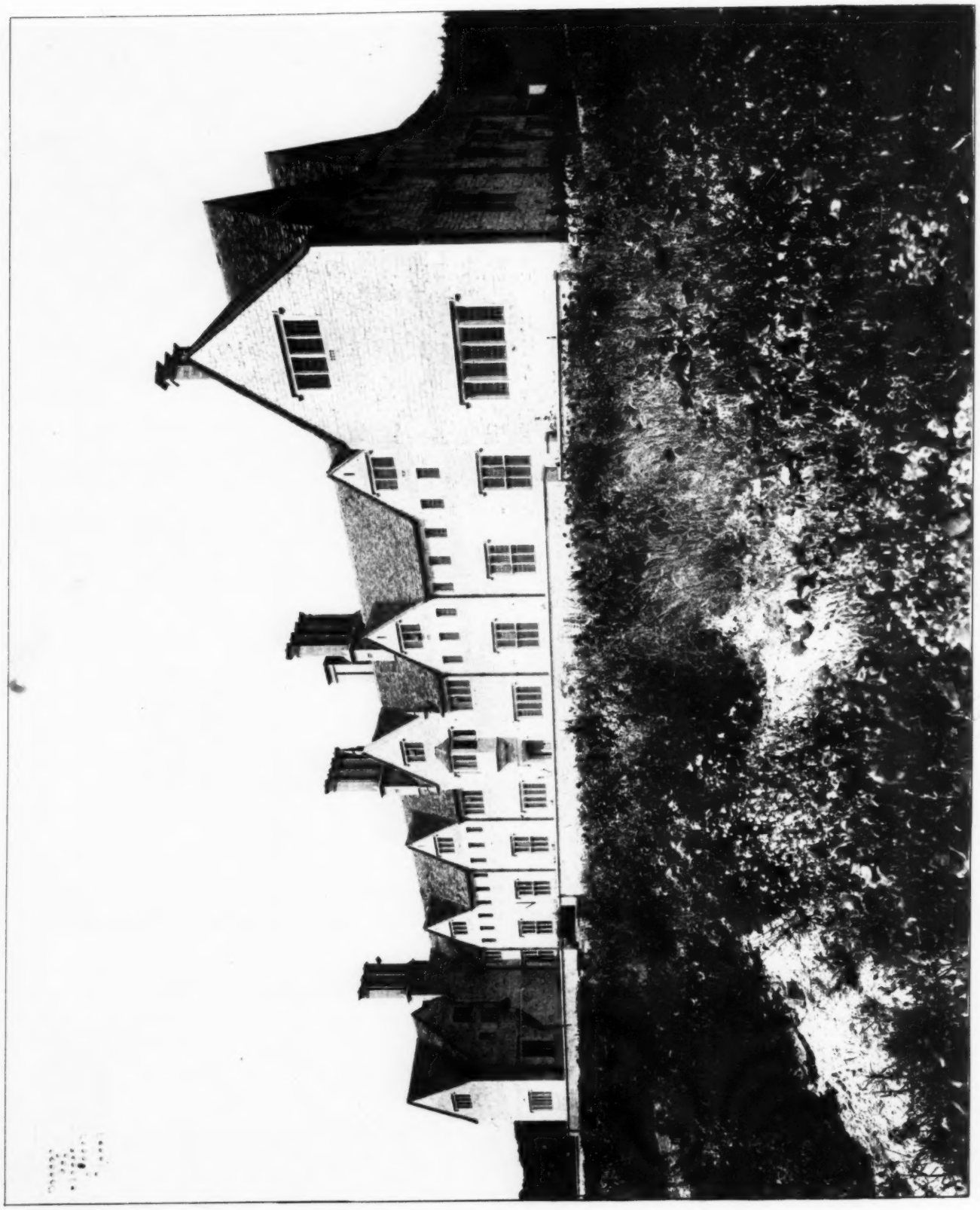
GYDE ORPHANAGE, PAINSWICK: CENTRE OF SOUTH FRONT.—MR. P. MORLEY HORDER, F.R.I.B.A., ARCHITECT.

GYDE ORPHANAGE, PAINSWICK.—Mr. P. Morley Horder, F.R.I.B.A., Architect.

PHOTO: Arthur Tedman.

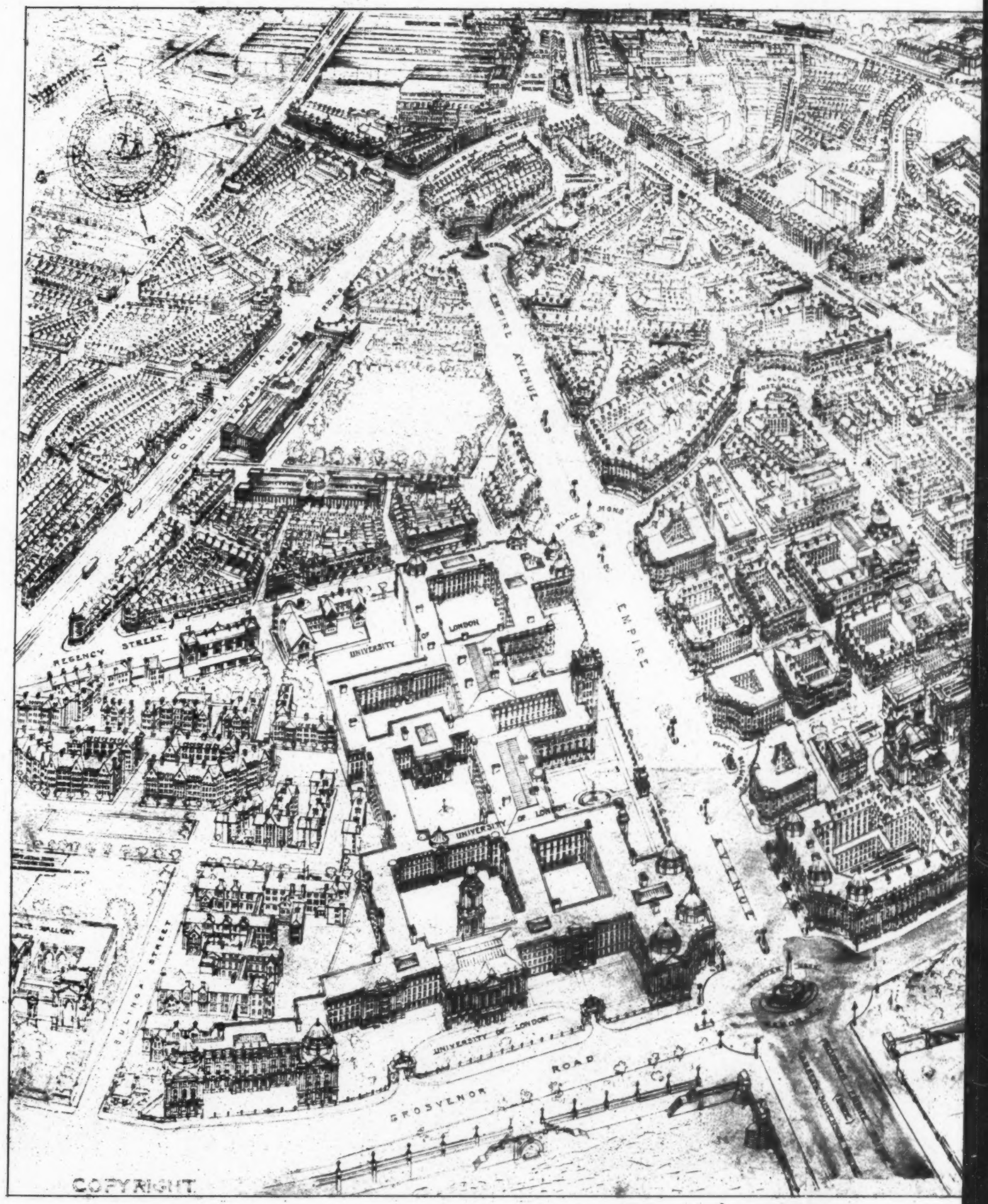
GYDE ORPHANAGE, PAINSWICK.—MR. P. MORLEY HORDER, F.R.I.B.A., ARCHITECT.

PHOTO: ARTHUR TEDMAN.



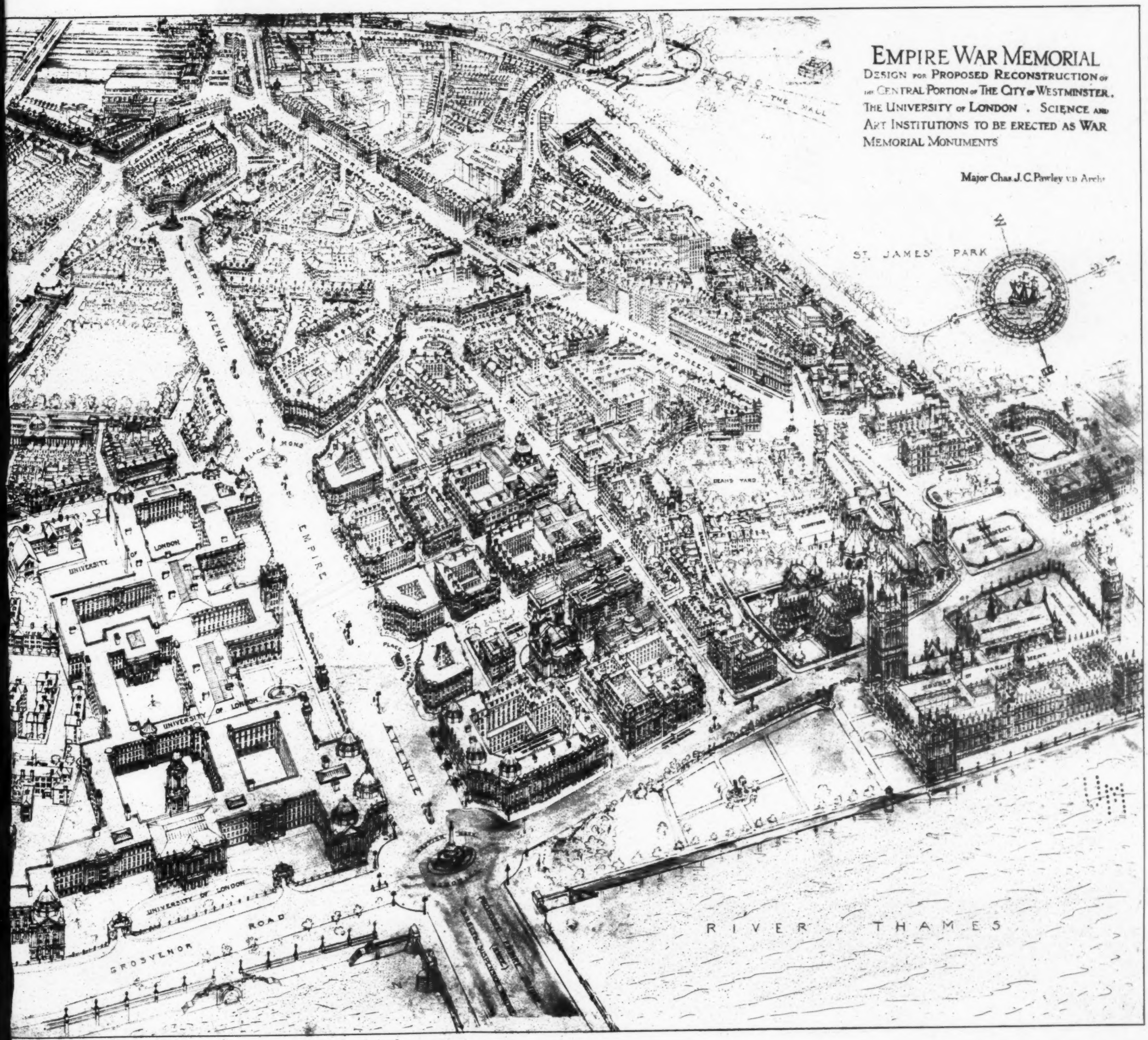
GYDE ORPHANAGE, PAINSWICK: VIEW FROM SOUTH EAST.—MR. P. MORLEY HORDER, F.R.I.B.A., ARCHITECT.

PHOTO: ARTHUR TEDMAN.

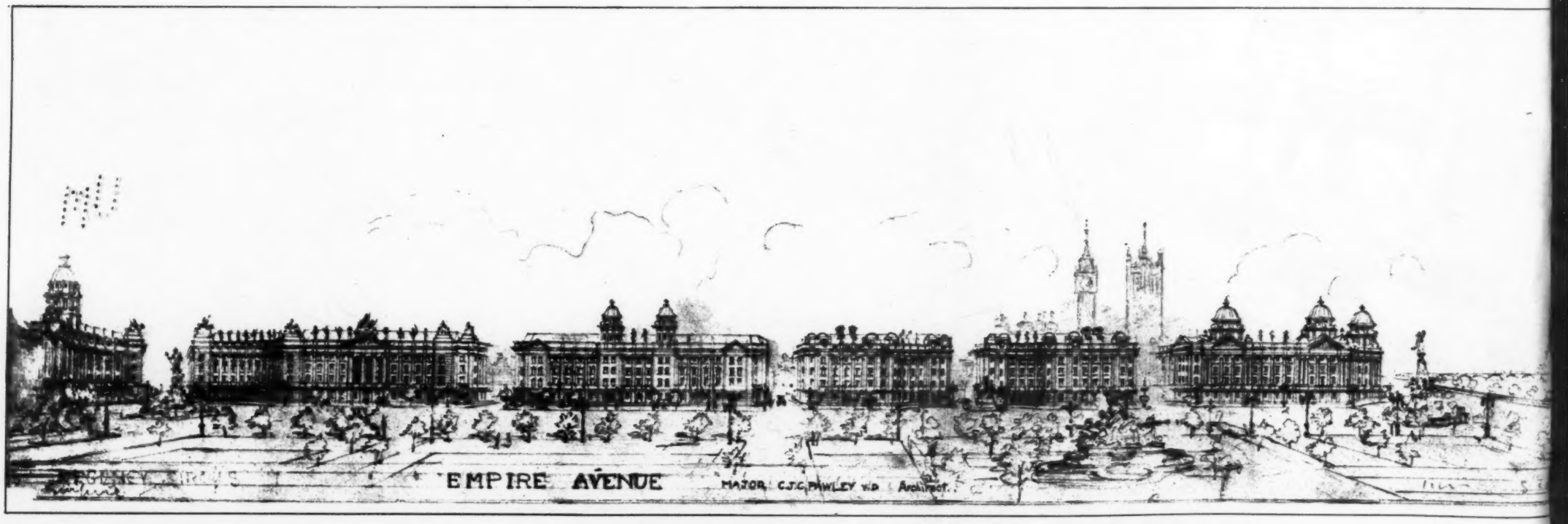


PROPOSED EMPIRE WAR MEMORIAL.—BY MAJOR C. J. C. PAWLEY

GYDE ORPHANAGE, PAINSWICK: VIEW FROM SOUTH EAST.—MR. P. MORLEY HORDER, F.R.I.B.A., ARCHITECT.



PROPOSED EMPIRE WAR MEMORIAL.—BY MAJOR C. J. C. PAWLEY, V.D., ARCHITECT.



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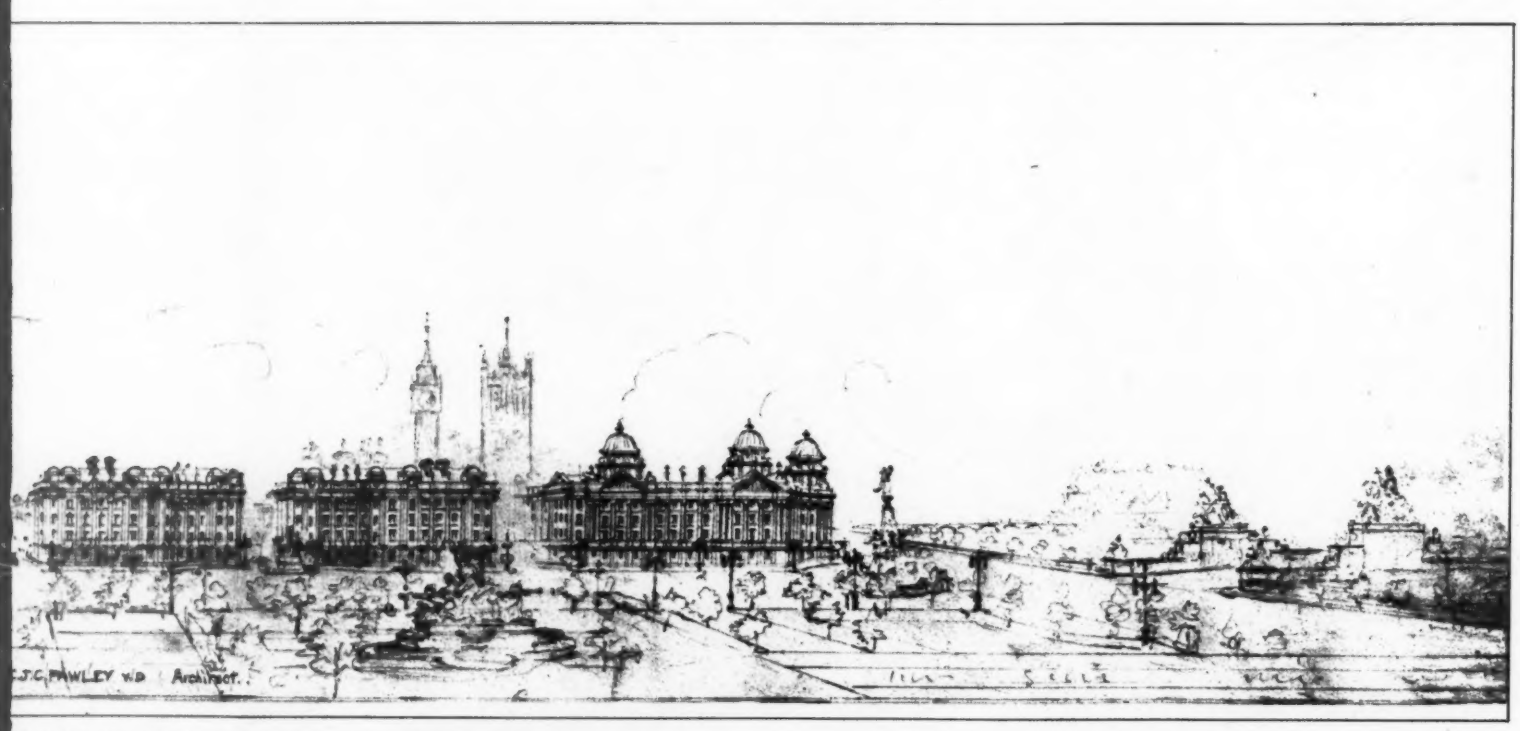

WAR MEMORIAL.—BY MAJOR C. J. C. PAWLEY, V.D., ARCHITECT.

A NATIONAL ARCHITECTURE.—V.

BY W. R. LETHABY.

MORPHOLOGY, TYPES AND CLASSIFICATION.

IN a little introduction to the theory of architecture, published in 1912, I ventured to say that what we most require as a groundwork in these modern and scientific days, when everything has to be understood through words written down in books, is a science of building morphology which shall deal with the classification of forms much as the botanist deals with the variations of structure in the vegetable kingdom. By morphology I mean first of all the development of the various forms of architectural cell—a point just touched on as the geometry of planning, the packing of such cells together in complex structures, and further the development of species and the grouping of great families of related buildings.

All the immense body of records and observations from old buildings needs to be resorted and re-indexed under headings suitable for builders of to-day. The works of the past are ready-made experience, and far from our ignoring them we must learn to see them with clearer eyes in the solid, and not as ghosts of style on paper. We must learn to make more use of them by understanding them better. The director of buildings may well ask how he is to design modern buildings without material; and while this material is only presented to him indexed under styles, he will almost necessarily try to imitate these styles and go on producing his sham Greek, sham Gothic and sham Renaissance. Thus, the books say, was done by the Greeks; thus by the Romans; thus in the time of Edward I; thus and thus in the times of Elizabeth and Anne. All true and very interesting history, but extremely confusing if it is the only way in which we can obtain access to a knowledge of the customs of the art of building.

Besides this classification by chronology, which is archæology and history, we require classifications by (1) constructive elements and essential purpose; (2) local custom; (3) and in reference to materials.

Elements of Building and Ways of doing things.

We need collections of precedents in categories of constructive factors, as walls, arches, vaults, domes, windows, skylights, chimneys, floors, roofs, staircases. Such a classification would insensibly change our outlook from the signs of style to the prime needs of modern building and the best ways of satisfying common modern requirements. I shall return to some of these building factors again, but we may here take as an example the skylight and consider the modern poverty of contrivance as compared with the many ingenious and even delightful devices which have been made use of, lanterns, dormers, glazed domes—circles, octagons, ellipses. Compare the ordinary house skylight again, for soundness of construction and doing its building-duty with the efficiency of the ship skylight. Much of this knowledge is already recorded in neglected books, like Peter Nicholson's volumes. There is a big honest skylight on a building just opposite the west front of St. George's, Hanover Square, which is not offensive.

We should be always on the look-out for the best ways of finishing roofs at eaves and gables, of attaching rain-water pipes, of finishing rubble walling, of forming window lintels, of laying floors, setting grates, and obtaining crackless ceilings. Under such a system we should really make much more use of antiquity than we do at present, when we are apt to stop at "orders," or to concentrate attention on the style of tracery and pinnacles.

The "style" conception is at best impoverishing, for it shuts us up to one narrow group of half-understood expedients. Directly we give up "style designing" all experience is free to us as builders. All sorts of valuable materials, old and new, are waiting for our use, old ways of building, plastering and pargeting walls and of framing roofs and doors would be made available, and new ways of using steel, asphalte and glass would be sanctioned.

Classification by Materials.

In gathering a number of significant examples suggesting a right use of several materials, we should find another firm principle of design. The differences between rough stone, free-stone and marble would be demonstrated, and the possibilities of post and slab construction in hard stones would be brought out as well as the use of free-stone blocks. We have too much come to think of stone as a substance like soap or cheese, which is to be cut into the forms of any paper patterns which may be drawn by a clerk in an office. I should like to do a big window thirty feet wide, divided by granite posts, and fitted with slabs of pierced flag stones. Again rubble walling has excellences of its own, and its cheapness might make it possible to build a mass once again—such as some plain, tall monumental tower—perhaps circular, with a conical capping in the same material, something big and liberal and not finished with glass paper. Young students who feed on styles are not enough acquainted with native materials such as our granites and marbles.

The grey series — Frosterley, Purbeck, Derbyshire-fossil and Hopton Wood are most excellent materials. The large internal door linings of the British Museum, are good examples of the use of Hopton Wood stone, which seems to me a material superior to the famous Istrian stone used in Venice. Marble and alabaster might be used in thin slabs for internal wall coverings more frequently than at present, and there is no reason why marble should always be polished.

Carpentry has almost disappeared in the more petty forms of joinery; good scaffoldings show how essentially interesting it still might be. Under joinery would be collected ways of framing doors and making staircases. Recently I saw a plain staircase made about 1840 by some country builder; the balusters were the common plain one-inch uprights, but every eight or ten were braced together with an ×. It hardly cost more than ten shillings extra for the whole staircase, but it turned the railing into a charming lattice. Window sashes 100 years ago were very carefully considered, and divided up variously into panes by slender bars: now we have fallen back on the crudest doll's house window of coarse bars because it is supposed to be "Queen Anne."

A collection of examples again would show what a valuable building material cast iron was, while we have come to rule it out contemptuously. It certainly lasts, as the fine St. Paul's railings show, which are just exactly two centuries old, and a coal-plate in my street, dated 1844, is not even rusty, although it has never been painted, but only rubbed by passing feet.

Locality and Custom.

In most of the books which we have on so-called "Building Construction," the varieties of local custom are almost entirely ignored. Walls, for instance, are usually just stone or just brick; but in the real world of Britain scores of ways of building walls from Devonshire cob to Portland ashlar were practised while building was in the hands of practical experts. These methods of building produced all sorts of delightful combinations and expedients which reacted on the development of forms. The curious notion which young students were prone to believe as a result of such teaching was that there was some abstract and ideal "architectural design" which might be produced "in competition" for a building to be erected either in Aberdeen or Bristol. This silly notion is now deeply embedded in the heads of our employers from one end of the kingdom to the other. Architects they think are people who produce tasty designs painted on paper, which they are to turn over and approve or disapprove or have amended to their taste. Of course any real building, much more than a garment, has to be cut according to the given materials, the climate, and the local customs. A preliminary to preparing a scheme for a building for any district should be a knowledge of the local materials and the traditional ways of using them. Such knowledge of local customs should be brought together in a series of reference books.

During the present summer I have stayed in Buckinghamshire and Wilts. In the former stone was very scarce, and the common way of building was with flints, strengthened in all sorts of pleasantly ingenious ways with courses, strips and lozenges of brickwork. There was also much black-tarred boarding. In this particular little village every building had been erected in the 19th century, I should think; yet all but the most recent buildings were so direct and thoughtful that they were interesting. One little chair factory of brick was "as pretty as a picture." A small block of two houses, built about 1880, was a lesson in building; the front had been designed to look respectable, and was dull and dumb in red brick and free stone, while the flank and back were charming. The local flints had been used, in alternate bands of those which were broken and showed black and those which were unbroken and grey; this with the quoins and courses of strengthening brick made delightful walling. In Wiltshire I was in the Chilmark Quarry district, and here many little cottages are built in large stones roughly hewn. A small country house—about £30 a year—was of fair close-jointed ashlar, with wide windows not surrounded by any architraves or mouldings; over the door a slab on brackets; all very smiling, reasonable and civilised.

Classes of Structures and Improvement of Types.

Still another necessary grouping is that of the diverse classes of buildings required for different purposes; the house, hospital, shop, town hall, school, library, museum, church, &c. Houses, for instance, as they vary in size from the cottage to the palace, and by situation, as in town or country, tend to fall into types. Just as the old sailing ships fell into the types of schooner, brig and barque, so a house, notwithstanding an infinite diversity of details, tends towards one of a few groups—the compact or rambling, the tall or low; the central lighted by a skylight; or the looking-through-to-garden type. There is also diversity of general character, which largely depends on the materials used; as rough and solid, thin and light and neat. The church types have to be considered in a similar way. We have too long been content with the parallel walls and arcades without effective cross-ties, and the arcade of separate arches. Why might not the spandrils be pierced at times, the openings rising to one height under the aisle roof? The museum needs to be reconsidered; it seems to me

that one good type would be a perfectly built, well-lighted warehouse. For the railway station I should like a boldly constructed shed, kept as clean as might be, with a few big topographical paintings by a good scene painter.

Some classification of types and materials seems to be a necessary preliminary to the most essential part of the whole business—our setting about the continuous improvement of types. Progress, life, reality is to be entered on just here in the endeavour to improve general types, and all the minor factors of buildings. Any style, any level of average production, need hardly trouble us if only we will take up this serious business—the true business of an architect—the improvement of types; the perfecting, that is, of the cottage, the small house, the shop, and all other classes of structures in regard to suitability, efficiency, durability, economy, light, warmth and workmanlike finish. Again, let me say, we should not worry about copying or originality, it does not matter one straw; an "originality" may be a new terror, while a right copying in the right place may be a supreme felicity. If you suppose you like "Gothic" or "Renaissance" they are equally only names to us, and there is no need to repudiate anything or for any vows. So strangely have we been miseducated and misled that I can readily suppose that the designer of a building might find it impossible to get the drawings done without thinking of his church as "Decorated," or his house as Neo-Soane, or his town hall as in the Paris Atelier style. But when the thing has been got together it would be easy to begin on a re-examination from the point of view of the Commonsense and Efficiency styles under a sense of responsibility to our age. Any residue of sham style—if only there had been a sincere endeavour to hunt it out—would of course be overlooked, and be put down to weakness of the flesh or the head.

OBITUARY.

The Late Lieut. (Acting Captain) Aubrey C. Finch Hill.

WE regret to record the death of Mr. A. C. F. Hill (who died of pneumonia on active service, in France, on October 24). He was the third son of the late Mr. Joseph Hill (senior director of Higgs & Hill, Ltd.), and was born in 1874. Deceased was educated at Clifton College and subsequently articled to Mr. C. F. Selby (of Messrs. Corderoy, Selby & Co.). After leaving that firm he acquired the business of Messrs. Foxley & Co., Bayswater. During recent years he erected a number of houses on the Grosvenor Estate. Mr. A. C. F. Hill joined the Royal Flying Corps in December, 1916. After serving as Equipment Officer in England, he left for France with his squadron in November, 1917. His organizing abilities found larger scope, and for the last six months he was in charge of the erection of a series of aerodromes behind the front lines. Mr. A. C. F. Hill leaves a widow and two sons.

School War Memorials.

The General Committee of the Blundell's School War Memorial Fund, at a recent meeting, at which the headmaster presided, decided to make an appeal for £20,000, the objects in view being the erection of a memorial cross in the school grounds and of a new Big School. An executive committee was appointed, with F. Herring and J. F. Pugsley as hon. secretaries, and it was stated that £2,000 has already been promised. The School Roll of Service contains close on 1,000 names, and 175 Old Blundellians have already fallen.

THREATENED APPROPRIATION OF THE ADELPHI.

PROTEST MEETING BY THE LONDON SOCIETY.

ON Thursday of last week, Lord Aberconway, P.C., K.C., presided over a meeting held in the hall of the Royal Society of Arts, 18, John-street, Adelphi, W.C. 2, convened by the London Society, to consider the grave risk which threatened the Adelphi estate by reason of its proposed appropriation by the Air Board.

The chairman said he was glad to be present to support the action of the London Society in entering a public protest against the intentions of the Office of Works to occupy in a more or less forcible fashion some of the old houses in the Adelphi, which for generations had been objects of very great interest to all who loved London and those who were interested in the architectural history of this country. They did not want to prevent any Government department, least of all the Air Board, from being properly housed, and if they thought there was no other accommodation to be found they would be content to leave the matter where it was. Nor did they contend that if the houses in the Adelphi were taken over for Government offices they would necessarily be seriously injured or demolished. They did feel, however, in the first place that there were a great many other buildings equally convenient in the neighbourhood, and in many respects far more suitable for the objects which the Government had in view, and in the second place they felt that where they turned a number of more or less irresponsible people into old houses, there was no limit to the possibilities of minor destruction of detail that might take place—destruction of a kind that they could not easily replace without creating modern work in place of work which had a real historical value. They were glad to think that the Office of Works, under Sir A. Mond, was by no means an iconoclastic body, and he had reason to believe that their views would meet with a sympathetic response from those quarters, and also from the public at large.

Sir Aston Webb proposed the following resolution:—

> "This meeting desires to draw the serious attention of the Government and the Air Board to the unique historic and artistic value of the buildings on the Adelphi estate, and requests an assurance that no further portions of the estate shall be taken over until satisfactory reasons have been given against the occupation of other available accommodation."

He said they had called that meeting to try and represent their great interest in the buildings that were threatened, the great importance they attached to them, and their fervent hope that the rumours which came to them from time to time in connection with the utilization of those buildings would turn out to be fallacious. Some of the properties concerned had lately been turned into flats and that had made them still more unsuitable for the purpose to which they were proposed to be put. The houses on the Adelphi estate had very beautiful interiors, with a very unique character of decoration; the chimney-pieces and walls were of a very beautiful and delicate character, and they could not be replaced because they had not the men now to do the work. If they had, a mere reproduction of work of that sort could never be the same as the original. The estate was the result of a speculation by three or four architects. Personally he thought that architects made a mistake in building for themselves—they had far better stick to their last as architects and build for other people, and it would perhaps have been the case with the brothers Adam, because they embarked upon a scheme which very nearly brought them to ruin. The fact remained, however, that they put their very best work into the buildings on the Adelphi. They lived there themselves; they called the streets after their own names, and the estate was their hobby throughout their life. Robert Adam was one of the greatest architects of his time. He was architect to George III and had been recognised as the man who introduced a distinctive style of his own, both in the elevations of the buildings and in the interior decorations, and it was those things they were anxious to see saved. There seemed to be no lack of buildings which the Air Board could obtain without choosing that little Naboth's vineyard of theirs, and it would be a very lamentable thing if anything happened to the houses there. They wanted to get some definite assurance from the Office of Works that they had abandoned their intention to take those buildings. They had received letters saying that at present it was not the intention of the Government to take any more of the houses, but that, of course, the department could not give any guarantee in the matter. It was because they felt just that little doubt and uncertainty that there was a possibility of their being taken that he moved that resolution.

Sir Henry Wood, in seconding the motion, said he was not a bit afraid of the Office of Works, but he was afraid of the Air Board, because he had suffered from them elsewhere. Since he was a boy, London had entirely changed in its environment and many of its historical memorials had been destroyed. Those that were left had really become of interest and value, and they must not let any more be destroyed. The Adelphi had peculiar claims of its own. It was not a record of ancient or medieval London, but it was a record of the latter part of the eighteenth century and it was typical of those times. That was a time not eminent in literature or art, but it was a time of growth in science and industry, the benefits of which were reaped in the succeeding century. He hoped the London Society would not be satisfied with anything less than a definite undertaking on the part of the Government that they would not further interfere with any of the houses on the Adelphi.

Mr. Campbell Swinton having spoken, Mr. T. Fisher Unwin, as a resident, cordially supported the resolution. It would be a thousand pities if any harm was done to the houses on the Adelphi, particularly those on the Terrace, for visitors from abroad, especially Americans, made a point of coming to see the architecture.

Mr. Fladgate, speaking as the representative of Mr. Drummond, the freeholder, said that that gentleman had represented to the powers his strong objections to his estate being taken for Government purposes, not only on account of its extremely interesting history, but also on account of the great inconvenience it would be to the tenants. His representations, however, were of no avail, and they were told that it was impossible to have an assurance that no further houses would be taken. Mr. Drummond pointed out to the authorities that, fronting Adelphi-terrace, there was a large plot of vacant land, which he was willing to put gratuitously at the disposal of the Air Board. He also offered them the use of the Little Theatre if they wanted further accommodation, but so far neither of those offers had been accepted.

Mr. William Woodward said it seemed to him there was no limit to the depredations of the Office of Works. If a small committee was formed of practical men to take dimensions of the superficial areas and the cubical contents of the various Government offices, he believed it would be found that already there was ample accommodation for all the staffs required. He felt sure that if that were done it would be found that there was no necessity to commandeer buildings in the Adelphi or anywhere else.

Mr. Charles T. Ruthin, an inspector in the War Cabinet Committee on Accommodation, said it had never been suggested that the room in which they were meeting should be taken over, and it had also been publicly stated that the taking over of Adelphi-terrace was never contemplated.

The resolution was carried unanimously and a vote of thanks to the chairman for presiding terminated the proceedings.

FUEL ECONOMY IN PRIVATE HOUSEHOLDS.*

By A. H. BARKER, B.Sc., Wh.Sc.

Lecturer in Heating and Ventilating Engineering, University College.

IN the last article* we considered generally the question of the relative values of different kinds of fuel, and the principles which should guide us in selecting fuels for different purposes. We discussed the fuel values in their relation to the Fuel Order, and we ventured to criticise the official action in this matter. In the present article we are to discuss the general use of fuel in the home, more particularly the question of heating the room, both in its qualitative and quantitative aspects.

Subdivision of Fuel used in a Private Household.

The use of fuel in a private household may be divided into three or four different sections, which we shall take in the following order :—

(1) That required for warming the building.

(2) That required for cooking the food. An important section of this may be (2a) that required for heating the water required for all purposes. This is not, of course, entirely required for cooking, but partly for tea making and partly for washing up purposes, and partly for personal washing; but all may be regarded under one head.

(3) That used for drying clothes.

(4) That corresponding to the lighting requirements.

I shall deal with these seriatim in the briefest possible manner.

Warming a Room.

There are, of course, a great number of different methods of warming a room—open fires, closed fires, coal or coke stoves, gas fires, gas stoves, oil stoves, water pipe radiators, and so forth.

To classify these and to understand the difference between them we must consider the physical means by which heat is introduced into a room.

It must be explained that, generally speaking, there are only two fundamentally distinct ways of warming any space :—

(1) By warming the air in it.

(2) By utilising the agency known as "radiation," which, of course, has nothing to do with what are called "radiators."

(1) *Warming by Convection.*

The first is relatively easy to understand. Suppose we introduce into a room an amount of heat represented by a bucket of hot water, which for the present we will assume closed by a tight fitting lid. The heat leaks through the iron and will continuously escape from the surface, owing to cold surrounding air coming in contact with it carrying the heat away, whereby the air becomes warm and circulates to all parts of the room. This warm air comes into contact with the furniture and other things and warms them. The heat is thus transferred as it is called by convection from the hot bucket to the furniture.

(2) *Warming by Radiation.*

The other method of heating space is by "radiation." It is by this method that we receive heat from the sun. The heat travels in straight rays, like rays of light, at an enormous speed across any space not occupied by a body which absorbs it, whether a vacuous space containing no air, or a space filled with air. It is not, therefore, communicated by means of warming the air, but by direct rays which pass through the air without warming it at all. Thus between the earth and sun there is an enormous space, 95 millions of miles or thereabouts, in which there is no air whatever; but the heat of the sun is transmitted to us just the same by this process of radiation. It comes to us like light, and by the same agency. We have all seen the watchman in road-mending operations, when we are going home from the theatre on a frosty night, keeping himself quite warm, by a glowing brazier, although the air all round him is freezing.

The fire does not heat the air but it warms the man. In just the same way, when we have a glowing fire in a room, this distributes heat all over the room, but not by warming the air. The heat is distributed in just the same way as light is distributed from an incandescent globe. It falls on the furniture or the bodies of persons in the room, and warms them directly. The heat passes directly from the hot body to the object and warms it.

Diathermancy.

The passage of heat is for all practical purposes instantaneous. We know that heat of this kind will pass right through a substance transparent to heat rays, such as glass, but only in certain conditions, which I need not at present explain. It will not pass through opaque things, like a chair, table or screen. When it is caught or absorbed by such things the opaque object is warmed. When the rays pass through a *perfectly* transparent object they do not warm it at all. All seemingly transparent objects are really only *partly* transparent. They thus absorb a part of the heat and allow part of it to pass on. It is not necessarily true that a substance which, like glass, is transparent to light is also transparent to heat rays. Transparency to light is not the same thing as transparency to heat or diathermancy.

It is a matter of common experience that the heat of the sun will come right through a glass window on a frosty day, thus showing that we *can* get great heat right through a solid surface of glass, but the glass is made slightly warm—showing that it is not perfectly transparent. We can even set a thing on fire with a lens made of ice. If, for instance, we get a square piece of ice and melt its edges down to the shape of a lens by holding it between the hollows of our hands we can form a lens with which we can easily in bright sunshine set fire to a piece of paper. The heat which sets fire to the paper comes right through the ice without melting it, though doubtless it begins to melt it, because the ice is not perfectly transparent to heat rays.

Now ice cannot exist as ice if it is at a temperature above 32°, that is, it melts. The fact, therefore, that we can get the enormous temperature required to light a piece of paper from the sun through a sheet of ice shows that the heat is not transferred by warming the intermediate substance, whatever that may be, air, ice, water, or anything else.

In the same way, we can easily have the air in a fire-heated room so cold that it is impossible to endure it if there is a screen between us and the fire; whereas when we remove the screen the fire may be so hot that we cannot bear to sit in front of it without getting scorched. An experiment will illustrate the passage of heat through various substances. Take a source of radiant heat—an electric fire, and an instrument called a thermopile, for measuring the intensity of the heat proceeding from the fire. A galvanometer will indicate that intensity by the movement of this small spot of light on a screen, which is reflected from a tiny mirror suspended in the centre of the instrument on which this powerful beam of light falls. Thus the smallest movement of the mirror causes the spot of light on the screen to move without causing any friction in the instrument. When the spot of light moves a long way across the screen it indicates a powerful beam of radiant heat impinging on the instrument or thermobile.

But now allow the thermopile to be exposed to the rays from the fire. You will see an instant large movement of the spot of light, which speedily takes up a fixed position, which indicates the intensity of the heat proceeding from the fire. Now insert between the fire and the thermopile a sheet of glass. You will see at once the spot of light moves back a certain space.

If we compare the deflection of the spot of light with and without the glass we shall find the glass cuts off about 65 or 70 per cent. of the whole of the rays from the fire, but it does not cut them off completely. If we leave the glass here for some considerable time until it has absorbed a good deal of this heat, as I have already explained, the glass becomes hot and its surface itself begins to radiate heat to the thermopile, and you see the spot of light beginning to move upwards again, but it never gets anything like as far as it does without the glass.

Now remove the glass again, and you will see the spot of light will travel to exactly the same point as it did at first. By inserting different substances between the fire and the thermopile we can tell what their relative value as transmitters of radiant heat is. If you put a vessel of water between the two, you will see that though it is perfectly transparent to light it cuts off a great part of the heat.

Escape of Heat from a Room.

The manner in which heat escapes from a room corresponds generally to the two methods by which heat is supplied to the room. Thus we can have the heat carried away by convection currents of warm air, or by radiation.

If we open the door and the window in an ordinary room, or open two windows at opposite sides of the room, we shall get the cold air blowing into the room, and the warm air blowing out of it. The heat is thus directly carried away by the hot air, and the cold air so introduced into the room has to be heated up, and absorbs its share of the available heat.

If the two windows are left open the air in the room may be maintained almost as cold as the outside air. The current of air passing through the room will thus carry away the whole of the heat which is communicated to the air, and will gradually cool down the furniture and other bodies in the room to a low temperature.

The other method by which heat is lost is by radiation. Heat may be given off from a hot fire by radiation, and will impinge on the surrounding cold walls, where a large portion of it will be at once absorbed. The outside of the wall is in contact with the outer air, and the wall as a whole is at a temperature somewhere about half between the temperature of the inner air and of the outer air.

The absorption of the heat by the wall, therefore, conveys to the outside air a continual stream of heat, which does not pass out of the room as in the former case by a current of heated air, but simply by conduction through the wall. The heat escapes in just the same way as the heat from our bucket of hot water.

Heat can also be carried away in this manner apart from radiation. The warm air of the room in contact with the cold walls parts with some of this heat to the cold walls, and the heat is conducted through the substance of the walls and lost, even although none of the air in the room escapes.

* Continued from page 245, October 18.

We have, therefore, carefully to consider both the supply of heat to the room, and the loss of heat from the, room before we can understand the important questions of quantities of heat and temperature.

Temperature in a Room.

The temperature taken up by the objects in the interior of a room is the result of a struggle between the heat supplied and the heat lost. If we are supplying heat to the interior more quickly than it is being lost the temperature will rise ; *vice versa*, if we are supplying less heat than is being lost the temperature will fall—in both cases the rise or fall will continue until such a temperature is reached that the rate of supply is equal to the rate of loss. These two different agencies must be comprehended if any understanding is to be had of the way a room is heated.

(To be continued.)

RURAL HOUSING AND VILLAGE PLANNING.

THE first of a course of Chadwick Public Lectures was delivered at Derby, on October 7 by Professor Adshead, F.R.I.B.A., who dealt with "The Agricultural Village of the Past." In the course of his remarks, he said :—

To understand fully the problem of rural housing, it is a wise course to make a thorough investigation of rural conditions and of the agricultural village in the past ; and this, if only because no industry is so conservative as that of agriculture. The earliest records of village life in England show us a state of society where members, living together in detached groups were bound together by family ties ; an almost universal system amongst communities of primæval people. The village community of the ancient Briton was tribal and its site was less permanent than that of the later Roman Settlement or Saxon village. The tribal system has undoubtedly persisted until quite recently in the Celtic areas of Great Britain.

But the real interest in the origin of the English village and the Danish village of the Eastern counties relates to the influence of the Roman colonization and later Saxon acceptance of the same. During the Roman occupation, apart from purely military "castra," which often developed into cities like Chester, the land was, for the most part, populated on the "villa" system. A country having been conquered and roads surveyed, selected areas were parcelled out to those Roman freemen who merited reward for military service. When the Saxons came over they found England extensively cultivated, also ironworks, quarries, potteries, brick and tile kilns, glass works, &c. ; more than thirty walled cities ; many camps and military stations ; and everywhere good roads. Near each town was an area of tilled land, and along the roads stood neat and comfortable houses, each with its farm and retainers. It was a golden land to the Teutonic eye.

The Saxon Village of Pre-Norman Times.

The Saxons divided the land, villas and estates, going by lot ; and these Roman villa buildings, if not destroyed in their raids or left to fall into decay, were taken over with slaves and bondmen, and work was continued as formerly. As to whether the developed Saxon village owes its most pronounced features to the influence of the Roman villa or to the tribal traits of the invaders, is a controversial question; but let us now describe in detail the Saxon village of pre-Norman times—a high-water mark in English village history and one to which may be traced the strongest traditions in the village community of to-day.

The village would be made up of a manor house with its farm, the demesne probably consisting of about 500 acres ; clustering near by or straggling along an unkempt lane, would be the farm houses of the villaines, and closer together in groups would be the cottages of the cottier class. Immediately outside would be the yard lands of the villaines, the few acres of the cottiers, the meadows and the open fields. There might be six or ten villaines—(these are average numbers)—each of whom would hold about 30 acres of the arable land. These acres would not be separated, but would consist of separate acre or half-acre strips, scattered all over the arable land, and inherited from father to son. In this area would also be a few strips sometimes amounting *in toto* to five acres, held by each cottier. The arable land was cultivated on the three years' system.

Then there was the Lammas land, set aside for hay, which was common after the hay harvest had been gathered on Lammas Day. Away, outside, would be the woods, wastes and common land, common to all but marked off roughly as included in the manor or "tun." Whilst the villaines rendered service to the lord, practically the whole time of the cottier would be in service to the villaine. Of the cottier class were the ploughmen, shepherds, goatherds, &c. Village disputes were settled in the Moot Hall or Hall of the Manor, or in earlier times under the village tree. Then we must not omit to mention the cow common and poultry run—the elementary village green. The priest was an educated freeman and a dependent of the Lord of the Manor, who owned his church. One can see how full of interest was village life in these Saxon times. Each villager inherited his position, had his own garden and agricultural strip and free access to the open land where he could gather wood, fish, or—with restrictions—hunt. He had his holy days and days when the whole of the village proceeded to the market town and fair.

The Succeeding Centuries.

By the twelfth and thirteenth century, the influence of the Church had grown and the priest, originally entirely dependent on the Lord of the Manor, assumed a more influential position and my Lord became very often an absentee. England became more closely organized, taxation was established, the Manor became a Royal holding, and the village dispute was taken to the hundred moot. The market, moreover, became subject to strict supervision and the exaction of tolls. Towns grew in number and importance and whilst the handicrafts of the village were supplanted by the trade crafts of the town, towns became more and more dependent upon the villages for their food.

This great change in the condition of the agricultural classes was suddenly augmented in the year 1349 by the depredations of the black plague, and, whilst in some cases it swept away the populations of whole villages, it left others all over the country wrecked and depleted ; and it is interesting at the present day to note that the shortage of labour which followed produced a rapid rise in wages, which was quickly answered by the passing of the Statute of Labourers, an Act creating a minimum wage, and resulting, at the end of the fourteenth century, in a great peasant revolt. It was under these conditions that arable land was turned over to sheep farming, and that there was introduced into the village industries such as the manufacture of cloth.

During the fifteenth century enclosure began and became serious, due largely to the interest of town folk in land. Now we get the first appearance of convertible farming whereby the farmer, instead of holding a multitudinous number of strips, had his holding consolidated into six fields, and one can easily see how the holding of the poor cottier, becoming more and more precarious, in many cases disappeared, leaving him a landless labourer on the land.

From then onwards the village as a social community shows a loss of intimacy and partnership between the Lord of the Manor and his tenantry, he at the same time strengthening his purely legal hold on the land ; and it is easy to see how dissensions that set in amongst the labouring classes led, on the one hand, to food riots and emigration to the towns, and, on the other hand, to a bolstering up of the paternal interest of the squire, by such acts of benevolence as the founding of almshouses, and the institution by Act of Parliament of many forms of relief of a charitable kind. Up to the fifteenth century charity had been dispensed by the Church, but by the Act of 1601, 'the old poor law of Queen Elizabeth," each parish became responsible for its poor. Needless to say, the poor rate that followed was accompanied by an increase in paupers, tramps and sturdy beggars being classed with the deserving poor.

During the seventeenth century the pack horse was superseded by the waggon and ways became roads ; but it was not till the middle of the eighteenth century that we got the coach. It was the coming of the coach that gave importance to the inn. In the Middle Ages there was always a distinction beween an inn which lodges and entertains travellers and a common alehouse. The alehouses and inns were run by local brewers in circuits, and it was in the year 1550 that approved alehouses had to obtain licences annually. It was in the middle of the seventeenth century that, with the Act of Nonconformity, Quakers, Independents and Baptists each vied with one another in upsetting the authority of the priest, and in establishing their respective tabernacles in villages as well as in the larger towns.

We now come to that period which bridges the village of the Stuarts with the village of to-day. It was during the reign of the Georges that the more progressive villages, originally with thatched and casemented cottages, were rebuilt, the new cottages being squarer in proportion and sashed and tiled. It was during the eighteenth century that the village industries in many cases gave way under the more highly organised methods of the factory. At the commencement of the eighteenth century, enclosures and open fields were still found side by side, the latter being worked by the successful farmer with hired labour. The open fields were worked by a class who had withstood the oppression of ages—the cottiers and the less successful of the farmer class. And now appear the squatters, a class who at times when labour was scarce had gradually edged their way on to the open land. Between the eighteenth century and the middle of the nineteenth saw the passing of some four thousand special Acts of Parliament for the consolidation of tenancies and incidentally to enclose common land. There is no doubt that the reform was, from the national and economic standpoint, a sound one ; but used as a pretext for enclosing the commons, wastes and pastures it was one of the worst and most cruel series of Acts that the country has ever passed, eventually resulting, as it did, in dispossession of the common rights and of much of the joys and health which country life should give to the rich and poor alike.

The Gas Industry and Public Service.

At the Seventh Annual General Meeting of the British Commercial Gas Association, held at the Royal Society of Arts, John-street, Adelphi, W.C. 2, on Wednesday afternoon, October 16, the President, Sir Hallewell Rogers, J.P., in introducing the incoming President, Lord Moulton, P.C., K.C.B., F.R.S., Director-General of Explosives Supplies, said that apart from its prompt action in meeting the need for explosives in the early days of the war and in releasing men for the fighting forces and experts for the laboratories, the gas industry had done invaluable work for the country in the quick improvisation of depots, canteens, hospitals and other establishments for the militant Army, and of factories and workshops for the industrial army. It had set itself to providing fuel oil for the Navy ; had furnished the farmer with cheap and indispensable fertilisers ; had been an important source of ammonia supply ; and, last but not least, had furnished enormous supplies of gaseous fuel to munition works of all kinds, as well as increasing quantities to all branches of industry and to the homes of the people.

THE GARDEN CITIES AND TOWN PLANNING ASSOCIATION.

L.C.C. HOUSING CONFERENCE.

WE have received a memorandum which has been prepared by a sub-committee of the Association, consisting of Mr. H. V. Lanchester, F.R.I.B.A.; Mr. W. R. Davidge, F.S.I.; Mr. Cuthbert Brown, A.M.Inst.C.E.; Mr. Warwick Draper; and Mr. C. B. Purdom, Secretary to the Committee, for the consideration of the local authorities represented at the Greater London Housing Conference on October 30. The object of this memorandum is to represent to the Conference the need of the application of bold and comprehensive principles of planning to the development of the Greater London region in connection with the provision of houses and other buildings after the war. The problem of housing, it is urged, is bound up with several other problems; in particular with those of the relief of traffic congestion, the construction of arterial roads, the preservation of existing open spaces, and the more orderly and efficient development of industrial areas. "The opportunity" (we quote from the memorandum) "for a new departure arises out of the magnitude of the housing emergency that will have to be met after the war. It is generally accepted that vigorous State and municipal action will be necessary, the preparations for which must be made on a large scale without delay. No other conclusion is possible in face of the main facts: (1) that for more than four years the construction of dwellings for the normal increase of the population has been stopped; (2) that in the London district there remains from pre-war days a great deal of overcrowding and also much insanitary property to be dealt with; and (3) that private building enterprise will be for some time out of action after the war, owing to the dislocation of prices and rentals, the scarcity of material, and the probable opening of many more attractive avenues for investment. . . . If we regard the period of reconstruction as extending over the next seven years from the end of 1918, and the same rate of growth to continue during that term, the number of persons to be housed between the end of the war (whenever that may be) and December, 1925, can be estimated at 726,000. At an average of five persons per dwelling, 145,200 additional houses will thus be required in Greater London by 1925. This estimate takes no account of overcrowding, rebuilding, or re-housing in connection with slum clearances. . . . It may be assumed, therefore, on a conservative basis, that, during the period of reconstruction, not less than 120,000 small dwellings will need to be built for the people of Greater London, in addition to 25,000 larger houses which may be built by private enterprise. . . .

A Systematic Inquiry Needed.

"It is essential that a much wider view should be taken than it is possible for any single local authority to take, and that the housing schemes for London should not be left to individual authorities to prepare on their own. A hundred housing schemes for the area, prepared without relation to one another, would make confusion worse confounded. It is, therefore, suggested to the Conference that, as a first step, a systematic inquiry as to the actual need for dwellings should be undertaken for the whole of Greater London; and that to avoid delay the enquiry should be undertaken forthwith by the London County Council in conjunction with the other local authorities within the area.

"Just as it is necessary for the housing problem to be considered for London as a whole, it is equally necessary that the problem itself should be considered in relation to the industrial, political, and economic character of the area. Hitherto, the consideration of the constructive problems of Greater London has been confined to the traffic question; and, as a general rule, the discussion, even of that question has proceeded on assumptions which are too narrow. It is far too readily taken for granted that London is, and will remain, a single organic economic group, wherein the mass of industrial and commercial buildings are centrally placed, and the mass of dwellings are placed in the surrounding suburbs, the whole of the working population passing twice daily between a single centre and a widening outer ring. But this conception does not correspond to the facts, and still less to the practicable ideal which is within reach. For twenty-five years or more there has been a strong disposition for manufacturing industries to establish themselves in the outer area of all great cities, and London has been no exception to the rule. The process has gone so far that the conception of the city as an organism with one centre of circulation is no longer true. London has its enormous central heart; but it also has a belt of minor hearts scattered within and without its suburbs The general result is bad because there has been no order in this development, because factory location has had no relation to housing location, and because these new centres are in many respects imperfectly organized. Moreover, the position of many of them at intermediate stations on the suburban lines of communication complicates rather than relieves the central traffic problem. It is the negation of town planning to leave industry to locate itself and to confine our efforts to getting out of the housing and traffic difficulties which this neglect engenders. . . .

A London Town Planning Commission.

It is to be hoped that one result following the Conference will be to formulate the demand for the creation of a regional authority. The Conference is asked to consider the desirability of the creation of a Permanent Greater London Town Planning Commission to exercise control with regard to housing, industrial and residential development, and all means of suburban communication, over the whole region which is in direct and continuous economic dependence upon London. Nothing short of this can provide the unity necessary to give practical effect to long-debated proposals for London improvement, the settlement of which the housing emergency will not permit to be much longer delayed. . . . While such a Commission must be recognized as being necessary for the ultimate development of the Greater London area, it is suggested that in order to secure immediate action the powers that already exist should be used to the fullest possible extent with due regard for the comprehensive scheme that will have to follow. The most urgent of all questions is the stopping of further building on fresh sites in the central area, and the check to indiscriminate development in the inner suburban zones. It is, therefore, suggested to the Conference that the following broad principles should be observed by the local authorities themselves pending the creation of a Town Planning Commission for Greater London and the adoption of a general town plan: That within a radius averaging ten miles from the centre only such building should be undertaken for the time being as is necessary to round-off present development, and that outside that limit existing industrial and residential suburbs should be planned as compact semi-industrial towns, their industries being restricted to well-defined areas. Thus, the Greater London housing schemes, which must, perforce, be provided on a large scale, could be so prepared as not to occupy land which it may possible, under the final town planning scheme, be found desirable to preserve as public or private open spaces. While the absence of the general town plan is bound to be felt until it is in being, the local authorities can, by their own immediate action, and without waiting for new legislation, observe some of the main principles that it will embody. The fact that the bulk of after-war building for some period is bound to be executed under the direct control of the municipalities, gives them opportunities as well as responsibilities that they should not neglect; at least, they should decline to build-in the people of central London by means of further solid extensions of bricks and mortar.

The Preservation of Amenities and the Principle of Control of Building.

The destruction of the charm of the surroundings of London has proceeded unchecked for so long that it has been accepted as inevitable in the face of economic necessity. Historic sites are overwhelmed and the beauty and interest of old places disappear almost without protest in the course of the spread of population. It urgently needs to be recognized that this disorderly progress of building development can, at least, be checked by the organized efforts of the municipalities in the manner already indicated. It is clear that when the plan for the whole area comes to be prepared it will have to provide for an ultimate policy of building control. It will probably be found necessary for the greater part of the undeveloped land within a ten-mile radius and in some cases even beyond, to be expressly preserved from building development. It is not overlooked that the practicability of such a policy is disputed. It is obvious that it would be futile to prohibit building on certain areas if profound economic factors were making for their utilization. But another thing equally obvious is less recognized. It is that if economic forces now rising in the scale demand the cessation of the solid growth of the Metropolis, it may prove, in the long run, disastrous to follow what now appears to be the line of least resistance. It is not merely a question of amenity. A study of economic tendencies shows that within a few years it will be necessary to satisfy by some means or other the demand of industry for sites where highly organized and specialized facilities for production can be secured, where factory re-planning and extension may be systematized, where transport can be simplified, and where housing and social conditions of a kind that labour asks for can be supplied. . . .

The Garden City Principle.

If municipalities are to respect the principle of the preservation of open land, in many cases within their own areas, where then should they build? The proposal about to be made is not without difficulties; but it presents so many advantages that the most careful consideration is asked for it. It is that the time has come to apply the full garden city principle to the development of outer London. For the purposes of industry, public health, good housing and improved working surroundings for the people, as well as for civic progress, there can be no question that the garden city standard is the ideal. That principle does not state an arbitrary method of new town construction as is sometimes supposed. It does, however, imply a principle of civic unity, which imposes restriction upon town growth by making provision for the systematic planning of outer areas to meet the needs of industrial expansion. It may be stated as a formula by means of which town development in general may be subjected to intelligent control: That a town should be of a population large enough to allow of efficient industrial organization and full social activity; but that it needs to be no larger; that the urban area should be limited to a size requisite to house this population well, and should be surrounded by a zone of open land large enough to possess a distinctively rural and agricultural character; that the whole of the land, including the urban area and the rural zone, should be owned and administered in the interest of the local community. . . .

The Conference is asked to consider the following proposition: That suitable areas of rural or semi-rural land be acquired by or at the request of the Greater London Housing Authorities, particularly the London County Council or the other County Councils in the area, in order to carry out the necessary after-

war housing schemes. The sites to be, as a rule, from twelve to forty miles from the centre, on or near railway lines, rivers or canals, and capable of development as complete and efficient industrial units. In some cases an existing small town will form a useful nucleus for development, in others villages may be included, and sites that have already begun to be developed will sometimes be indicated. In every case a town plan should be prepared, and the main lines of development laid down from the start. The actual work of development could be done by public utility societies or trust companies formed in conjunction with the local authorities. . . . The point is that we are about to enter a period when, owing to various conditions, every kind of building will be required in greater numbers than ever before, and will certainly be provided somewhere. The planning of new centres in a manner decided enough to leave no doubt of an intention to carry them through, would draw manufacturers, business men and people generally to them. The advantages they would offer would be obvious.

INCORPORATED INSTITUTE OF BRITISH DECORATORS.

On Thursday, October 17, there was held at Painters' Hall the opening meeting and conversazione of the Institute. In the unavoidable absence of the President, Mr. Higson, Mr. L. A. Shuffrey, one of the vice-presidents, presided.

After the reception of the guests, Mr. Shuffrey read a short address which had been forwarded by the President, in the course of which he said :—"No branch of the building trade has been so depleted of its staff by the National Service Department as our own, nor has suffered so willingly in the cause of patriotism, but in spite of all our difficulties we have endeavoured to carry on and keep our heads above water; and despite the restrictions of our supplies and the increased prices of labour and material, useful work has been executed. But what of the future? Are we to continue in the old sweet way? The closing up of the ranks of labour behoves us to organise and draw together the forces of the employers, so that we may be strong enough not necessarily to combat with the operative, but to come to a closer and more brotherly understanding amongst ourselves. It is my sincere wish that the methods adopted in the future will place our trade and craft in its right position amongst the great industries of this country, and that proper recompense shall be the reward of all the thought, worry and hard work attached to the lot of the master decorator."

Mr. Shuffrey, in referring to the President's remarks, said they hoped to see better times as soon as the Government released white lead and linseed oil. As to the President's question: "Are we to continue in the old sweet way?" no doubt he was thinking of the working painter. He (the speaker) understood that a federation is being started of masters and men, and that was as it should be because if one side was organised and the other not, the organised party would certainly have its own way. It was only by the masters combining and being as well organised as the men that these things could be discussed on equal terms. As decorators, they did not mind so much what the men were paid. They were quite prepared to pay a good wage, but what was so disturbing was the everlasting change in the rate. Wages had gone up, and now figures were very high indeed on both sides. As an Institute, they did not really go into the question of wages at all. One of the reasons for their existence was to keep up a high ideal of decoration, to study the best decoration that they could find, the best that had been done in the past, and with lectures to that end. They also dealt with education of the decorator, and other practical matters.

During the evening the Master of the Painters' Company described some pictures which were exhibited and gave a short account of the history of the Company. The drawings shown included four which had been sent by Mr. J. D. Crace, President of the Institute for many years.

PAINTING IN WAR-TIME.

At a meeting of the Society of Architects on the 10th ult. Mr. James Lawrance read a paper on "Exterior and Interior Painting in War Time." In our issues for Oct. 18 and 25 we gave part of this paper, and below we give the conclusion and some notes of the discussion which followed :—

The main argument that has been put forward against R.M. paint is that it is not possible to make standard paints in three grades that would be suitable for all purposes and conditions. To some extent this is a feasible argument, but most painters are quite capable of making adjustments for special purposes, by intermixing various grades of paint. For instance, the usual standard grades are, priming, flat undercoating, inside glossy and outside glossy, and from these there should be no difficulty in mixing, say, a semi-glossy by admixture of flat undercoating and inside glossy. In any case where difficulty presents itself it is only necessary to state requirements to the manufacturers.

The ingredients of obtainable paint mediums are necessarily in an experimental stage, and therefore, cannot be guaranteed as to durability with certainty in every case. A very fair prophecy of the result can be deduced by comparatively short exposure tests, however, and tests that I have made in this direction prove that an optimistic view may be taken respecting the durability of outside paints if properly made, and that interior paints can certainly be made quite satisfactorily.

I think it will be clear from what I have said that the selection of materials for paints needs greater care than ever under present conditions, and this selection would at all events be bewildering to painters, and in many cases disastrous results would accrue if the matter were left in their hands.

There is another question which presents itself in dealing generally with the possibilities open to us for house painting at the present time. How far can coloured paints take the place of white? We must admit that white is certainly the base for most of the tints used for decorative purposes, and my experience with this aspect of the craft is sufficient to convince me that the displacement of white by coloured pigments is strictly limited. However, I submit that there are cases where considerable saving of white pigment could be made. For instance, it is usual to apply slate colour as a first coating for green paints. Now red oxide paints are quite effective for this purpose, and green paint looks particularly well when applied over red oxide, and often possesses a superior brilliance, although this fact does not appear to be generally realised. But even when slate and other medium tones are used it would be more economical and more reasonable to procure these paints in a ready mixed form than to make them from white paint and stainers, because the white base so used possesses an obliterating power in excess of requirements. The judicious intermixing of certain cheaper pigments, equally satisfactory as regards durability, is fully understood by manufacturers, and produces efficient paints without making such a heavy claim on the comparatively scarce white pigments.

A method of decorating which might be resorted to in some cases on new woodwork is that of staining and varnishing. Varnishes present little difficulty to the manufacturers although formulae have had to be revised, alternative oils and spirits taking the place of linseed oils and turps. The resulting varnishes appear to give satisfactory results, especially those intended for inside use, but a considerable increase in the cost is involved. Quick drying varnishes can be produced, comparatively low in cost, but these are apt to be brittle and less durable than those containing a higher percentage of oil.

Surfaces treated in the manner described are quite durable, and can be painted over subsequently if desired.

Having dispensed with the practical consideration, there is room for few remarks on the commercial side of the question.

While it is true that white lead is practically unobtainable for house painting, there are considerable quantities of zinc pigments which can be obtained under licence from the Spelter Controller, and paints made from these pigments may be sold to painters in quantities of 1 cwt. at a time, and more in some cases if a special permit is obtained for necessary work in connection with the preservation of buildings and structures. Where a number of different jobs are concerned it is quite permissible to order this allowance for each job. I need not concern myself with the method of drawing the line between one job and another. The subtleties of this question are best left to the contractor. It is a problem possibly capable of possessing some elasticity. Coloured paints not containing lead or zinc do not come under the same regulations, and therefore can be supplied in bulk, providing that they do not contain linseed oil. The same remark applies to varnishes. Linseed oil is not allowed to be used for house painting, excepting in the case of small uncontrolled stocks; but, as already shown, efficient substitutes are in the hands of paint makers.

Summarising, I make the following suggestions :—

1. That white paints give the most effective results when purchased in ready-mixed form at any time, but more particularly so at the present time.
2. That these paints should be obtained from specialists in white pigment, in grades suitable to the work in hand, and according to specification, the usual grades being priming, flat undercoating, inside glossy and outside glossy, from which intermixture could be made for special purposes.
3. That clear distinctions should be made between paints for interior use and paints for exterior use, when ordering.
4. That zinc sulphide should be definitely prohibited in specification for outside paint.
5. That mineral oil and other non-oxidising oils should be prohibited in specifications for all classes of paint.
6. That where opportunity occurs for using coloured paints without offending artistic considerations, their use effects an economy.
7. When coloured paints are used, these should be specified in R.M. form, in order to effect economy in white pigments.
8. The method of sizing and varnishing on new woodwork is open to consideration.

This brings me to the conclusion of the main subject of my paper, but there is a broader aspect to the whole question that it is as well not to overlook. I have already pointed out that we have been brought back to first principles, and have to study the best means of painting afresh. This study accompanies a keen research respecting the suitability of certain materials for given purposes. The great value attaching to these facts, and the possibilities they open up for the future, need no demonstration. This is a supreme opportunity for architects to examine all specification phrases connected with painting, in order to ascertain whether they really fit in with the best technical methods. I have shown that certain prejudices held by painters have been swept away, I believe for ever, by war conditions. It is left for the architects to demolish the ghosts of these prejudices if they exist when preparing their specifications in the future. For instance, I feel confident that the progressive painter who finds that he can obtain the highest possible results on certain classes of work with zinc paints will not be tied to genuine white lead, for the architect will surely realise that, valuable as the latter material is, zinc is at least equal to it for some purposes, and in the opinion of many, supersedes it. I merely cite this as one example; others may be found by the architect in the course of possible research.

On the assumption that reasons do exist for re-modelling certain specifications dealing with

painters' work, perhaps a few suggestions bearing on its accomplishment will not be out of place. I make these proposals without being acquainted with any work that the Society may have already done in this direction, but in the hope that a view of the matter from the practical painter's angle may suggest some useful points.

My main suggestion is that specifications should leave room for alternatives by stipulating for materials of approved quality, and that this approval could either be given on the knowledge of previous experience of a particular article, or by a definite opinion formed in a manner which I here propose.

The activities of the architect's profession are so comprehensive and complex, that I imagine a tendency to specialise must exist, and, therefore, that the amount of technical knowledge regarding painter's materials claimed by the different members must vary considerably. If this be true, it would probably be advisable under an open specification to set up a kind of committee to which such materials could be submitted, and even in some cases to employ the services of a practical expert. It is worthy of note that some of the more recently founded Government departments (not tied by traditional methods) have adopted this plan of specifying, using the phrase "of approved quality," and realizing that it is what a material will do that matters, rather than what it is composed of; and the method has been highly successful, leading, as it does, to competition of a healthy kind and prompting useful research on the part of manufactures.

I submit further that a great deal of useful work might be done (especially at the present time) by a committee of this kind in the way of testing materials in a practical manner, especially as regards expos re tests, and I feel sure that any attempts made in this direction would receive the hearty support of manufacturers. Testing of paint is often done in a somewhat indifferent manner, although it is sufficiently sensitive to require reasonable treatment as a preface to reasonable results. On the other hand, it sometimes happens that tests boards are executed in a nursery, as it were, and then exposed afterwards.

I would suggest the following points as essential, if fair results are to be obtained :—

(1) Surfaces should either be of new material, wood, plaster, cement, &c., similar to that for which the paint is recommended, or a previously painted surface of stability. In other words, any faults likely to arise from the ground on which the paint is spread should be eliminated as far as possible.

(2) All materials should be rendered clean previously to painting and free from damp.

(3) Paint should be spread out thinly, so that oxidization of oils can take place in a thorough, even, manner.

(4) Excess of heat in drying is not to be recommended.

(5) Exposure tests should be executed in the position that they are to occupy during the period of exposure, and in similar positions to those likely to occur in actual practice.

(6) Recommendations and instructions of manufacturers should be strictly adhered to. For instance, a paint recommended for ironwork and perfectly suitable for the work, may give poor results if tested on a wood surface.

Again, if a paint is found too viscous for easy application it should be recorded as a fault against the paint; but a possible occurrence of a greater fault if the paint is thinned down (not according to instructions) could not fairly be so stigmatised.

(7) When tests are constantly washed for examination, it is advisable to leave, say, half the board untouched, as constant abrasion effects wear and tear of unusual character.

(8) Duplicate tests on different surfaces are desirable on grounds of doubtful character, as this often enables one to gauge the extent to, which the characteristics of the ground contribute to the appearance and durability of the finish.

(9) For exterior exposure tests not less than four coats should be given, and the alternating system already mentioned in the previous part of this paper, should be given due consideration.

(10) Exterior paints will not necessarily give good results if applied over unsuitable undercoats, but they should not be condemned on that account.

I realize that these hints on practical testing only touch the fringe of an extensive subject, but the suggestions made may be of some use; and even if the scheme proposed is beyond the scope of the Society for any reasons that I have not been in a position to consider, then if the points given are of any assistance to individual members, the space given to them here will be justified. Further, I should always be pleased to go more deeply into this subject if this is desired.

In the discussion which followed, Mr. N. D. Sheffield, F.S.I., said he agreed with the lecturer as to the advisability of the use of ready-made paints, but the difficulty was that the ordinary house-painter was prone to adulterate them. Certain small builders were very fond of buying paints by weight, and this clearly led to adulteration. There was a difficulty in specifying firms by name in the architects' specifications, especially when the specification had to be submitted to a committee, as it gave an impression that the architect was going to make something by specifying the paint of a certain firm.

Mr. C. D. Collins asked for the opinion of the lecturer on the use of graphite paints, which were much taken up now.

Mr. E. Partridge, F.S.I., agreed with Mr. Sheffield as to the difficulty of specifying firms' names for work which was passed by a committee.

Mr. Ivor Beaumont, said as to the tests, they were to a large extent vitiated by the climatic differences between different towns. In the tests carried out by the Institute of British Decorators, in some towns white lead came out very well; in others—Burslem, for example—it came out very badly.

Mr. A. H. Whitburn remarked that a great deal of wood was being used unseasoned and practically green; and after painting, the sap frequently oozed out and spoiled the paint. Could anything be put into the paint to prevent the sap getting through it?

Mr. W. Martin said that owing to the difficulty of getting white lead he recommended the use of ready mixed paints. In a building erected by him recently the paint seemed all right, but after two months, with the exception of two large doors, it had faded.

The Chairman reverted to Mr. Whitburn's question as to putting paint on to green woodwork. He thought it much better not to paint at all, if green; only stain the wood. He agreed with Mr. Sheffield as to the undesirability of putting firms' names in specifications. Ready-made paints he would prefer, but the difficulty was that there was always a thick residuum at the bottom of the paint-pot, and it was hardly to be expected that builders would buy that if they had to throw away perhaps a tenth of the paint they bought Constant stirring could be recommended, but the men would not bother. Before the war we got most of our materials for paint from abroad. Was any effort being made to stimulate home production?

The lecturer in reply said: As to the difficulty of house-painters tampering with paints, the only remedy he could suggest was that paint should be purchased in small quantities; then there would be less thick and useless sediment, as it would be more likely to get stirred up. The buying of paint by weight was due to an erroneous idea that the heavier the paint, the better it was. It was much better to buy it by the gallon, as it contained much more of the liquid medium, although paint might be thinned down too far, and contain too much liquid. He had not intended to suggest that the names of particular firms should appear in specifications, but that the paint used should be of approved quality. Graphite paint was very good material if the proper kind of graphite was used, and it was properly blended. It should be made with other pigments. The same remark applied to red oxide. A mixture of graphite and oxide would give better results. As to the covering power of zinc as against white leads, zinc would certainly in some instances cover a much larger area than white lead. As to opacity, he was quite sure that lead was equalled by several other materials. As to mixed pigments, research showed that paints made with mixed pigments would give better results than any single pigment. The tests made by the Institute of British Decorators were hardly fair, as pure and not mixed pigments were used. Mr. Whitburn had mentioned the treatment of green woodwork. There, were two kinds of exudations from wood—resinous and damp matter. Both these come through the paint after a time. It would be far better not to paint at all on the wood while it was in this condition.

A hearty vote of thanks was then accorded to the lecturer.

LEGAL REVIEW.

(*Continued from page* 263.)

Employer and Workman.

It is sometimes difficult to know exactly what is the law which governs matters of every-day occurrence which rarely give rise to dispute. Thus we may notice a recent case, Payzu, Ltd. *v.* Hannaford (1918, 2 K.B. 348) in which the question was raised whether in a contract for hiring a workman any notice is required to determine the contract.

The appellants, under the Employers and Workmen Act, 1875, had summoned an employee and were claiming damages in consequence of the employee having left without notice. The employers said that she was engaged at a weekly wage of 35s., which was paid on the Saturday in each week for the weekly period ending on Friday, and that having worked up to and including Saturday, January 12, 1918, the employee, without giving any notice, had failed to appear on the following Monday and had never since returned to work. The magistrate had found that this was a weekly hiring and that no notice was necessary. The employers appealed, and the Divisional Court remitted the case for him to determine whether it was in fact a weekly hiring or, as the employee alleged, a daily hiring. The Court pointed out that the magistrate had failed to note the fact that the employee had worked one day of a new week, *i.e.*, the Saturday, and that if no notice was necessary it would logically follow that the employers could have dismissed her in the middle of a week without notice and without payment for the part of the week in which she had worked. We may note that the employers had recognised this by deducting from the damages they claimed the one day's pay for the Saturday.

But the important point in the case is that the Court held that in determining a contract for hiring, the law implies a reasonable notice from either side. That view would be the one generally acted upon by everyone in the case of a weekly hiring; but Mr. Justice Darling is reported to have said: "The case must be remitted to the magistrate for him to consider whether it was a weekly or a daily hiring. If it were the latter, the respondent would only be bound to give a day's notice, and the damages would be reduced accordingly." These latter words seem to introduce some difficulty, for we submit that where a hiring is for and by the day, as there is no continuity in the employment, it is not usual to give notice. The only other judgment reported in full in the case, that of Mr. Justice A. T. Lawrence, seems to have dealt with a weekly hiring. The third Judge simply concurred, but whether with the judgment of Mr. Justice Darling or with that of Mr. Justice Lawrence does not appear. If a man is taken on merely for one day's work, it is clearly impracticable for notice to be given to him, but the judgment must refer to cases where a man is employed for more than one day or by the job but paid by the day.

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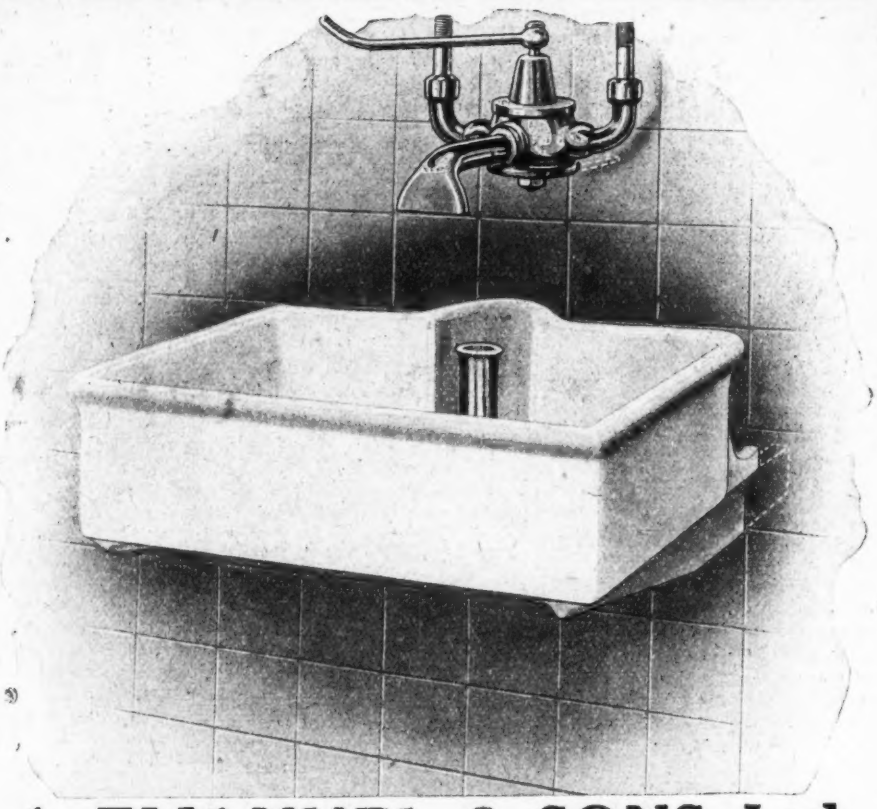

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THE BUILDING TRADE.

THE INDUSTRIAL COUNCIL FOR THE BUILDING INDUSTRY.—V.

MINIMISING the fluctuations of trade by intelligent anticipation and the augmentation of demand in slack periods is another question proposed for the consideration of the Industrial Council for the building industry.

It is closely related to the regularising of production and employment discussed in the second article of this series, and what applies to one applies largely also to the other. As we have said, it has not been found practicable to prevent fluctuations of supply or demand, although they can be to some extent foreseen and measures taken to provide against them.

Foreseeing fluctuations of supply and demand is a question of collecting statistics, on a world-wide scale, relating to any matter or happening in any locality which affects the available supplies of the products of nature required by Western nations, and in some cases Eastern nations as well, in their arts or manufactures or for food supplies, and in estimating their consequential effects upon demand for those products or for the manufactures into which they enter. Tracing their secondary effects upon industries which depend for their demand upon the prosperity of other industries is also necessary, and the survey, to be effective, should cover the world, because English commerce is world-wide and because Western nations generally demand supplies of much the same thing.

We have a striking example of this in the shortage of housing accommodation which prevails as the consequence of the war, not only in this country but in most European countries, whether belligerent or neutral.

The collection, collation, and publication of statistical information of the kind and on the scale necessary for foreseeing fluctuations of supply or demand for products could only be done by Governments, and it would require the service of experts to handle the statistical material effectively and to draw inferences which could be utilised by various industries. The inferences would be what the industries need to base their plans upon, so as to be ready for the fluctuations as they come; and to be effective, the information ought to be available in such a form that any important industry could see at a glance what the prospects of trade were for, say, a year ahead. A certain amount of statistical information is collected, but, so far as the writer is aware, not on a sufficiently wide scale; moreover, the public does not get the information reduced to the inferences which ought to be drawn, and it is evident from past experience that measures to deal with the consequences of trade depression have not usually been taken until there was an obvious lack of employment.

Supposing, however, that the information was available to show that a few months, or a year hence a considerable fluctuation in the supply of materials for the building industry, or in the demand for its productions, was to be expected, the question arises as to what steps could or should be taken to minimise the consequences of such fluctuation?

If the fluctuation was likely to increase demand, the consequences to be apprehended would probably be higher prices and increased cost of living following thereon, together with a shortage of suitable labour.

If it was likely to decrease demand, then one might expect a fall in prices and a decrease of the cost of living following thereon, together with a surplus of labour causing unemployment.

It is a matter of general experience that one of these conditions is usually followed by the other, and that the course of trade is represented on a diagram by a zig-zag line, showing that every wave of trade has its crests and hollows in sequence. Presumably the first question to which the Council should address itself would be as to how far an augmentation of demand could be spread out over a longer period than it would naturally occupy, so as to lower the crest of the wave, and how far a diminution of demand could be temporarily relieved, so as to fill up the hollow of the wave.

It may be said at once that anything taken off the crest and held over to fill up a hollow would be quite in the right direction, because it would not artificially augment the total volume, but that any filling up of the hollow of depression by forcing on work which was not really required at all would be unwise and bring its own penalty sooner or later.

In peace times there was a natural tendency for speculative building to await periods of low prices in order to enter the market, and to slacken that kind of production when prices ruled high. That is an automatic action tending to reduce the crests and fill up the hollows of the trade wave. A similar remark applies to extensions of industrial undertakings involving building or the housing of workmen.

Moreover, low prices mean cheap money, and that encourages municipal enterprises involving building. Unfortunately, those factors do not begin to operate until the depression is well under way, whereas unemployment and the checking of building turnover begin with the depression.

That is partly because the extent and depth of a depression are not known beforehand, and in the absence of that knowledge the "wait and see" policy may yield the better return on the capital to be invested. If that knowledge was available, however, long-headed business men might consider that the sooner they got their new arrangements made to meet depression by improved methods, or by opening fresh lines of development, the better able they would be to maintain their profits and avoid the effects of the coming depression, in which case the "wait and see" policy would no longer appeal to them.

An industry like the building trade, important though it be, forms relatively only a fraction of the total industries of the country, so that if by the provision of statistical information and appropriate inferences the major part of the trade, commerce, and industry, could be enabled to minimise fluctuations by intelligent anticipation in the shape of the kind of preparation referred to above, the problem for the building industry would be largely mitigated.

If the ideas so admirably expressed by President Wilson prevail and peace in Europe is founded upon the principle of a family of nations wherein the welfare of each is the care of all, one of the surest ways to promote harmony among the family in the future will be to foresee fluctuations of trade and meet them by wise measures calculated to mitigate their effects as far as possible, so as to ensure a practically continuous and fairly uniform prosperity among the nations. The collection of the requisite statistical information and the circulation of the inferences to be drawn therefrom, together with suggestions for meeting an anticipated fluctuation, might then be made the business of an international bureau, with which there should be connected an international weather and meteorological bureau—because weather has a great deal to do with the prosperity of peoples. It should be the business of the International Council, or whatever body is set up, to give a lead to the family of nations, to see that measures are taken in the various nations to counteract fluctuations of which warning has been given; and if it were thus brought home to each nation that they were all members of one great family, it would tend to strengthen the bonds which have been forged in the heat of the great struggle of the past four years.

(To be continued.)

BRICK CONTROL.

THE following very pertinent remarks appear in the *British Clayworker* for October. Some members of the Government are alive to the importance of the brick industry in connection with the great works of reconstruction necessary after the war, and we hope they will give consideration to the remarks of our contemporary: "The Brick Controller rejoices in making the path of the clayworker as difficult as possible. His vindictive attitude towards a member of the trade, commented upon in our last issue, is evidence of his entire lack of sympathy with an industry which has struggled bravely with adversity since the war started—an industry that he is out to strangle if possible. One would imagine that however ignorant a person might be of the job he has the temerity to undertake, he would in a few months get some inkling of the duties he has to carry out. But not so the Brick Controller. With an overweening desire to prevent profiteering, he goes to the other extreme and refuses in some cases to grant even a bare margin of profit. We think it is time that the higher authorities gave a hint to the Controller that his process of strangulation must cease, or that he must give place to one who will deal with the trade on equitable and business-like lines. The brick-trade is not seeking favours; it asks no more than to be allowed to live, and seeing that its renewed activity is undertaken at the behest of the Government, it has the right to be treated with consideration.

The Ministry of Reconstruction is appealing to manufacturers to open up their yards and to make stock against the coming demand for cottage building. Is it aware that the Brick Controller is doing his utmost to thwart its wishes? To show that we are not generalising in our comment, we append a letter from a firm of high standing in the trade, and we ask, What can be the object of the Controller in pursuing so senseless and short-sighted a policy?

'Our recent experience in the brickmaking industry reveals a very serious position of things and fraught with danger unless dealt with speedily and in a different manner from the course now being pursued; otherwise the supply of bricks will be hopelessly inadequate to meet the heavy demand which will arise after the war.

'What has happened in our case is that the Brick Controller, having taken possession of the whole of our bricks, the Ministry of Munitions has paid for them a price which does not cover costs. Our works are, therefore, depleted of stock, and we hesitate to take any steps to restart manufacture until we have reasonable assurance that our recent experience will not be repeated. Brickmakers are not less patriotic than other members of the community, but they cannot be expected to make bricks at a loss. We are inclined to believe our experience has been general, with the result that the present output of bricks is far below the requirements of the country, and will be very much more so when the war is over and the far-reaching schemes of the Ministry of Reconstruction as regards building come to be put into operation. With brickfields closed down in all parts of the country, bricks will not be forthcoming, and the housing problem, admittedly one of the most pressing needs of the near future, cannot be met. The serious effect of this on social conditions can be imagined as well as the intensification of labour difficulties that will certainly follow.'"

Coal Wastage and the By-Products.

The current issue of *A Thousand and One Uses for Gas*, the illustrated publication of the British Commercial Gas Association, gives some telling facts and figures regarding the loss of valuable substances sustained when crude coal is consumed in factory furnace or domestic grate. This "special by-products number" will come as a revelation to the many who do not realise the quantity of essentials manufactured from raw material recovered at the gas works by the distillation of coal into gas.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

BRIDLINGTON.—The T.C have purchased land in the Old Town to the extent of about 35 acres. The intention to develop the land in the vicinity of the stream known as the Gypsy Race, and to make a pleasant walk along its banks. It is also hoped that a small park will be opened between what is known as West Gate and Well-lane, in the vicinity of the rectory, and perhaps the desirability of setting up a garden village in the neighbourhood will also be considered.

EAST HAM.—Plan passed by B.C.:—Garage, St. Stephen's-road, for Messrs. Linday, 131, Plashet-lane —A report is to be drawn up by the Council's officers relative to the development of the vacant land on the North side of the Thames between East Ham and Tilbury.

EXETER.—£2,000 has now been received towards the war memorial of Blundell's School. The objects in view are:—(1) The erection of a memorial cross in the school grounds, and (2) the erection of a new big school, embodying the architectural feature of Old Blundell's, to replace the present room, which is too small for its purpose.

HAMMERSMITH.—Drainage plans passed:—At 4, Hythe-road, for Mr. A. Hukins; at Triplex Works, Hythe-road, for Mr. L. R. Peters; at Palmer's Stores, Bridge-road, for Messrs. I. S. Quilter & Son.

KIDDERMINSTER.—The T.C., in spite of strong opposition, have carried through the scheme presented by the Building Committee for the erection of over 100 houses within the borough.

LAMBETH.—The B.C. has approved a plan by Messrs. W. Clarkson & Son for a combined system of drainage for four new buildings and a factory proposed to be erected in Tinworth-street.

MOSBOROUGH.—At a public meeting at Mosborough for the purpose of reorganising the Committee for promoting a local memorial to those from the district who have fallen in the war, the provision of a public hall, with suite of rooms for parochial purposes, was decided upon.

SALFORD.—Plans passed by T.C.:—Construction of engine house, Laundry-street, Pendleton, and of drain, Greengate; alterations and additions to premises, Broad-street, Pendleton; premises, Vere-street, Pendleton: and premises, Gordon-street, Broughton.

SOUTHAMPTON.—At the last meeting of the T.C. Councillor Collins moved a resolution to the effect that competitive plans be invited for a town planning scheme for the whole of that portion of the town south of a line taken from Northam Bridge in the east to Hill-lane in the west, the plan to define the site of the proposed new town hall, and where practicable and consistent with economy views of the water on three sides of this portion of the town to be enjoyed from main thoroughfares. After discussion, the scheme was referred to a committee.

STOCKTON.—The R.D.C. has approved a plan for a new street of seventy-three houses on the south side of Billingham Village, for the Newcastle-on-Tyne Electric Supply Company.

WHITWELL.—The Parish Church is shortly to be restored at an estimated cost of £1,000.

WORTHING.—Plan passed:—Conversion of 14, South-street into shop, Mr. T. Garrett, for Mr. J. K. Hubbard. The L.G.B. is prepared to sanction a loan of £2,300 by the T.C. for sea defence works to be carried out after the war.

FIRES.

BERMONDSEY.—Damage estimated at £40,000 has been done by fire to Messrs. Payne's, in Tooley-street.

CROYDON.—Fire has destroyed the bakery of the South Suburban Co-operative Society.

HALES OWEN.—Damage amounting to about £7,000 has been done by a fire at the works of Messrs. Parkes & Sons, Mucklow's Hill.

BOOKS RECEIVED.

REINFORCED CONCRETE: THEORY AND PRACTICE. By Frederick Rings, M.S.A. Second revised and enlarged edition. (London: B. T. Batsford, High Holborn. 10s. 6d. net.)

A HISTORY OF EVERYDAY THINGS IN ENGLAND. Written and illustrated by Marjorie and C. H. B. Quennell. (London: B. T. Batsford, Ltd. 8s. 6d. net.)

WAR DRAWINGS. PART VI. By Muirhead Bone. (London: Country Life, Ltd., and George Newnes, Ltd. 10s. 6d. net.)

GUILDHALL MEMORIES: WITH PORTRAITS AND ILLUSTRATIONS. By A. G. Temple, F.S.A. (J. Murray, Albemarle-street, W., 16s. net.)

*See also our list of Competitions, Contracts, &c., p.290.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Accrington	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Altrincham	1/6§	1/6§	1/6§	1/6§	1/5§	1/6§	1/5§	1/2§	1/2§	1/2§
Ashton-under-Lyne	1/6§	1/6§	1/6§	1/6§	1/5§	1/6§	1/5§	1/2½§	1/2½§	1/2½§
Barnsley	1/3§	1/2	1/1½§	1/2§	1/1½§	1/3§	11	11	11	11
Barrow-in-Furness	1/3½	1/4	1/4	1/3½	1/3½	1/3½	1/2	1/-	1/-	1/-
Barry	1/3	1/3	1/3	1/3	1/3	1/3	1/-	10½	10½	10½
Bath	1/1	1/1	1/1	1/0½	10/½	1/1	10	10	10	10
Bedford	1/1	1/1	1/1	1/1	1/1	1/1	1/6§	1/2½§	1 2½§	1/2½§
Birkenhead	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/3§	1/1	1/1	1/1
Birmingham	1/4	1/4	1/4	1/4	1/3½	1/4	11	11	11	11
Bishop Auckland	1/2½	1/2½	1/4	1/2½	1/2½	1/1½	11	1/-§	1/-§	1/-§
Blackburn	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	8	8	8
Blackpool	1/-	1/2	1/2	10½	8½	1/1	10½	1/-§	1/-§	1/1§
Bolton	1/5§	1/5§	1/5§	1/5§	1/4§	1/6§	1/5§	10½	10½	10½
Bournemouth	1/1	1/1	1/1	1/1	1/1	1/1	1/-	1/1	1/1	1/1
Bradford	1/3½	1/3½	1/3	1/3½	1/2½	1/3	1/1	11	9½	9½
Bridgwater	1/-	1/-	1/-	1/-	1/-	1/-	11	11	11	11
Brighton	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11	11	11
Bristol	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Burnley	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Burton-on-Trent	1/1	1/1	1/1	1/1	1/1	1/1	1/0½	10½	10½	10½
Bury	1/5§	1/5§	1/5§	1/5§	1/3½§	1/6§	1/5§	1/-§	1/0½§	1/0½§
Cambridge	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/2	10½	10½	10½
Cardiff	1/3	1/3	1/3	1/3	1/3	1/3½	1/2	1/-	1/-	1/-
Chesterfield	1/-	1/2	1/1	11	10	11	1/-	9½‡‡	8½‡‡	8½‡‡
Colchester	11	11½	11½	1/-	11	1/-	9½	9½	8½	8½
Coventry	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/0½	1/0½	1/1
Crewe	1/0½	1/0½	1/0½	1/0½	1/0½	1/3½	1/2	8	8	8
Darlington	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	1/0½	1/0½	1/0½
Derby	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11½
Doncaster	1/-	1/1	1/1	10½	10½	10	9½	10½	10½	10½
Dudley	1/2	1/2	1/2	1/2	1/2	1/3	1/1	11	11	11½
Durham	1/2	1/2	1/1½	1/2	1/1½	1/10	1/0½	9	9	9
East Glam. and Mon. Valleys	1/3	1/3	1/3	1/3	1/3	1/5	1/2	1/-	1/-	1/-
Exeter	1/-	1/-	1/-	1/-	1/-	1/0½	11	10	10	10
Folkestone	1/-	1/-	1/-	1/-	1/-	1/-	10	9	9	9
Gloucester	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10½	10½	10½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	1/2½	1/2½	1/2½	1/2§	1/2§	1/2½	1/2½	1/-§	1/-§	1/-§
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Guildford	1/1	1/-	1/-	1/1	—	1/1	11½	9½	9½	10
Halifax	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1	11½	11½	11½
Harrogate	1/0½	1/0½	1/-	1/-	1/-	1/2	1/-	10	10	10
Hartlepools	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Hastings	10	10	10	10	10	10	9	7½	7½	7½
Hereford	11½	11½	11½	11½	11½	11½	10½	9½	9½	9½
Huddersfield	1/3½	1/3½	1/5§	1/1	1/1	1/2	11	1/0½	1/0½	1/0½
Hull	1/4§	1/4§	1/4§	1/4§	1/4§	1/4§	1/3½	1/2§	1/2§	1/2§
Ipswich	1/1½	1/1½	1/1½	1/2	1/2	1/2½	1/0	11	11	11
Lancaster	1/1½	1/3	1/2	1/1½	1/1½	1/-	1/1½	11	11	11
Leamington Spa	11½	11½	11½	11½	11½	11½	10½	8½	8½	8½
Leeds	1/3½	1/3½	1/3	1/3	1/3½	1/3	1/0½	1/0½	1/0½	1/1
Leicester	1/2	1/2	1/2	1/2	1/2	1/2	1/1	11½	11½	1/-
Lincoln	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	1/0½	10½	10½	10½
Liverpool	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/2½§	1/2½§	1/2½§
Llanelly	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
London	1/5	1/5	1/5	1/5	—	1/5½	1/2½	1/1½	1/1½	1/1½
Loughborough	1/3½§	1/2½§	1/1½§	1/3½§	1/3½§	1/1½§	11§	1/0½§	11½§	1/0½§
Luton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	11	11	11
Maidstone	1/1	1/1	1/1	10	10	1/1	1/-	10	10	10
Manchester	1/6§	1/6§	1/6§	1/6§	1/5§	1/6§	1/5§	1/2§	1/2§	1/2½§
Mansfield	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	10½
Merthyr Tydfil	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Middlesbrough	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Newcastle-on-Tyne	1/3½	1/3½	1/3½	1/3½	1/2	1/3	1/4§	1/0½	1/0½	1/0½
Newport, Mon.	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Northampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Norwich	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Nottingham	1/2½	1/2½	1/2½	1/2½	1/2½	1/3½	1/1	1/0½	1/0½	1/0½
Oldham	1/5	1/5	1/5§	1/5§	1/4	1/4	1/5§	1/1½§	1/1½§	1/2§
Oxford	11	10½	10½	10½	10½	9½	8	8	8	8
Plymouth	1/2	1/2	1/2	1/2	1/2	1/2	11½¶	11	11	11
Pontypridd	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Portsmouth	1/-	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½
Preston	1/4½	1/4½	1/4	1/3½	1/3	1/4	1/2½	1/0½	10½	10½
Reading	1/1	1/1	1/1	1/1½	1/2	1/1	11½	11	10½	10½
Rochdale	1/5§	1/5§	1/6§	1/6§	1/3	1/6§	1/5§	1/1½§	1/1½§	1/2§
Rochester	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	11‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Rugby	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	11½
St. Albans	1/-	1/-	1/2	1/-	1/-	1/-	10½	9	9	9
St. Helen's	1/6	1/6	1/6	1/6	1/6	1/5	1/3	11½	11½	11½
Scarborough	1/1	1/1	1/1	1/1	1/1	1/-	11½	10	10	10
Sheffield	1/3½	1/3½	1/3½	1/3	1/3	—	1/1½	1/0½	1/0½	1/0½
Shrewsbury	8½	11½	1/3	9½	—	8½	7	8½	8½	8½
Southampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Southend-on-Sea	10	10	10	10	P'ceworkers	10	9	8	8	8
Southport	1/4	1/3	1/5	1/4	1/4	1/4	1/4	1/-	1/-	1/-
South Shields	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	1/4§	1/0½	1/0½	1/0½
Stockport	1/5§	1/5§	1/5§	1/4§	1/4½§	1/6§	1/5§	1/1	1/1	1/1
Stockton-on-Tees	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Stoke-on-Trent	1/0½	1/0½	1/0½	1/0½	1/0½	1/-	11½	10	10	10
Stroud	11½	11½	11½	11½	11½	11½	11	9½	9½	9½
Sunderland	1/3½	1/3½	1/3½	1/3½	1/2	1/1½	1/4§	1/0½	1/0½	1/0½
Swansea	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Taunton	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Torquay	1/-	1/-	1/-	1/-	1/-	1/-	1/-	10	10	10
Wakefield	1/2½§	1/3§	1/2½§	1/2½§	1/2½§	1/2½§	1/1½§	11½	11½	11½
Walsall	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11½	11½	11½
Warrington	1/5§	1/5§	1/5§	1/5§	1/5§	1/5§	1/4§	1/1½§	1/1½§	1/2§
West Bromwich	1/3½	1/3½	1/3½	1/4	1/3½	1/3	1/1½	1/0½	1/0½	1/0½
Wigan	1/5½§	1/5½§	1/5½§	1/5½§	1/5§	1/5½§	1/5§	1/2§	1/2§	1/2§
Windsor	1/-	1/-	1/-	1/-	1/-	1/-	10½	9	9	9
Wolverhampton	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11
Worcester	1/-	1/-	1	1/-	1/-	1/-	10	10½	10½	10½
York	1/2§	1/2§	1/2§	1/2§	1/-	1/-	10	11½§	11½§	11½§

The Masons' rate given is for bankers: fixers usually ½d. per hour extra. * War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted. ‡‡ War bonus of 5s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include the 12½ per cent. bonus. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. bonus.—ED.]

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 3 3 6

Per 1000, Delivered at London Goods Stations

	£ s. d.		£ s. d.
Flettons	2 7 8	Best Blue Pressed Staffordshire ...	7 18 6
Best Stourbridge Fire bricks	9 5 0	Do. Bullnose ..	8 3 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed		D'ble Str'tch'rs	23 7 6
		D'ble Headers	20 7 6
Stretchers ..	17 17 6	One Side and two Ends ..	24 7 6
Headers.....	17 7 6	Two Sides and one End	25 7 6
Quoins, Bullnose and 4½in. Flats	21 7 6	Splays and Squints.....	22 17 6

Second Quality, £1 per 1.000 less than best.

Glazed bricks priced at so much each, 50 per cent. advance on list.

Permission to be obtained from Director of Supplies for Flettons, Wire Cuts, &c.

	s. d.		
Thames Ballast	17 0	per yard,	delivered
Pit Sand	16 0		
Thames Sand	17 0	„ „	2 miles
Best Washed Sand	17 0	„ „	radius
¾in. Shingle for Ferro-Concrete.....	15 0	„ „	Paddington.

Per ton, delivered.

	£ s. d.		£ s. d.
Best Portland Cement	3 3 0	..	3 6 0

Do. £2 16s. 0d. alongside in 80-ton lots.

Ferrocrete 2s. 6d. per ton extra on above.

Best Ground Blue Lias Lime 2 2 6 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 47s. 0d. per ton delivered.

Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.&S.W.R., South Lambeth Station, G.W.R., and Milease Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube..	2 11½

White basebed, 2d. per ft. cube extra.

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average.*

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 10	Closeburn Red	3 0
Beer in blocks ...	1 9	Freestone	3 0
Grinshill in blocks	2 6	Red & White Mansfield random block	4 8
Darley Dale in blocks	1 10	Yellow Magnesian Limestone do. do	3 9

YORK STONE, BLUE—*Robin Hood Quality.*

	s. d.
Delivered at any Goods Station London.	
Scappled random blocks .....Per Ft. Cube	5 8
6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super	4 6
6 in. rubbed two sides, ditto ..... „	4 11
3 in. sawn two sides slabs (random sizes) „	1 11
2 in. to 2½ in. sawn one side slabs (random sizes) ..... „	1 3
1½ in. to 2 in. ditto, ditto ..... „	1 1

HARD YORK—

Delivered at any Goods Station London.	
Scappled random blocks .....Per Ft. Cube	4 9
6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super	4 0
6 in. rubbed two sides ditto ..... „	5 0
in. sawn two sides slabs (random sizes) „	1 11
2 in. self-faced random flags ..Per Yard Super	6 0

WOOD.

TIMBER CONTROL ORDER, 1918.

Pursuant to paragraph 3 of the Timber Control Order, 1918, the Controller of Timber Supplies hereby gives notice that until further notice the following shall be the maximum prices at which imported timber may be sold. These prices are per standard landed and in store.

WHITE SEA REDWOOD

	1st £	2nd £	3rd £	4th £		1st £	2nd £	3rd £	4th £
4 × 11	59	57	55	53	2 × 9	53	51	49	47
4 × 9	56	54	52	50	2 × 8	52	50	48	46
4 × 8	53	51	49	47	2 × 7	52	50	48	46
4 × 7	53	51	49	47	3 × 6	47			
2½ & 3 × 11	58	56	54	51	2½ × 6	47			
2½ & 3 × 9	53	51	49	47	3 × 5	46			
3 × 8	52	50	48	46	2½ × 5	46			
3 × 7	52	50	48	46	2 × 6	47			
2½ & 7/8	52	50	48	46	2 × 5	45			
2 × 11	58	56	54	51	2 × 4	45			

Unsorted

UNSORTED LARCHWOOD at 3rd Archangel Redwood Prices.

Boards, 1st and 2nd, £2 10s. extra.
Boards, 3rd and 4th, £1 10s. extra.

WHITE SEA WHITEWOOD.

	1st. £	2nd. £	3rd. £		1st. £	2nd. £	3rd. £
3 × 11	57	55	50	3 × 8 u/s ..	48		
3 × 10	54	52	49	3 × 7 u/s ..	48		
3 × 9	52	50	48	2½ & 2 × 8 u/s	48		

	£	s.	d.		£	s.	d.
2½ & 2 × 7 u/s..	48	0	0	2½ × 5 u/s ...	46	0	0
3 × 6½ u/s....	47	10	0	3 × 5 u/s....	46	0	0
2 × 6½ u/s....	47	10	0	2 × 5 u/....	45	0	0
2½ & 3 × 6 u/s..	47	0	0	2 × 4 u/s....	45	0	0
2 × 6 u/s	47	0	0				

Boards, £1 10s. extra per std.

WOOD (*Continued*).

FEATHER EDGED BOARDS, £50 per std.

SAWN LATHS, 3s. 9d. per bundle.

U/S SLATING BATTENS (yellow and white and strips), £44.

5th ditto, £42.

SWEDISH AND NORWEGIAN FLOORING AND MATCHING.

U/S Red and White.

Per 100ft. super.	Per 100 ft. super
1½in. P.E. at 71/6	¾in. P.E. at 37/-
1¼in. P.E. at 60/-	⅝in. P.E at 31/-
1in. P.E. at 47/-	½in. P.E. at 23/-
⅝in. P.E. at 41/-	

If tongued and grooved or tongued and matched, 9d. per square extra.

1in. × 11in P.E at £54 1in. × 9in. P.E. at £51
1in. × 10in. P.E. at £53 1in. × 8.n. P.E. at £49

CANADIAN AND AMERICAN YELLOW PINE

	1st. £	2nd. £	3rd. £		1st. £	2nd. £	3rd. £
3 × 12 and up	80	69	67	3 × 8	62	55	53
3 × 11	78	63	61	3 × 7	60	53	51
3 × 10	66	58	56	3 × 4/6.....	58	51	49
3 × 9	64	56	54				

For complete specification and controlled prices, see issue of September 6, page 148.

Dry Wainscot Oak, per ft. super, as inch	0	3	0	..		—	
¾ in. do. do.	0	2	3	..		—	
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	3	0	..	0	4	0
Cuba, Mahogany	0	3	0	..	0	4	0
Teak (Rangoon, Moulmein or Java), per load.. ..	70	0	0	..	85	0	0
American Whitewood planks, per ft. cube ..	1	8	0	..	1	10	0
Glue, per cwt.	12	0	0	to	13	0	0

SLATES.

Per 1,000 of 1,200 f.o.r. London.

		£	s.	d.
Best Blue Bangor Slates,	20 by 10	21	0	0
„ „ „	16 by 8	10	0	0
First quality „	20 by 10	20	0	0
„ „	16 by 8	10	5	0
Best Blue Portmadoc	20 by 10	20	0	0
„ „	16 by 8	10	0	0
First quality „	20 by 10	19	10	0
„ „	16 by 8	9	15	0

TILES.

Per 1,000 f.o.r. London.

	£	s.	d.
Best machine-made tiles from Broseley or Staffordshire district.....	4	10	0
Ditto hand-made ditto.....	5	0	0
Ornamental ditto	5	2	6
Hip and valley tiles (per dozen)	0	9	0

METALS.

JOISTS, GIRDERS, ANGLES, C.I. COLUMNS, &c.
(*Prices controlled by Ministry of Munitions.*)

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	31½	35	36½	37½
Water	26½	32½	31½	35
Steam	21½	30	26½	32½
Galvanised Gas ..	8½	27½	12½	30
„ Water	—	25	3½	27½
„ Steam	6½ *on*	22½	2½ *on*	25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s.	d.	Bends, stock angles. s.	d.	Branches, stock angles s.	d.
2 in. per yd. in 6 fts..	4	2 ..	3	1 ..	3	8
2½ in. „ ..	4	9 ..	3	5 ..	4	7
3 in. „ ..	5	10 ..	3	8 ..	5	6
3½ in. „ ..	6	6 ..	4	7 ..	6	6
4 in. „ ..	7	1 ..	5	2 ..	7	3

RAIN-WATER PIPES, &c.

	Pipe. s.	d.	Bends, stock angles. s.	d.	Branches, stock angles s.	d.
2 in. per yd. in 6fts. plain	2	9½ ..	1	8½ ..	2	4½
2½ in. „ „ ..	3	1 ..	1	11½ ..	2	9½
3 in. „ „ ..	3	8 ..	2	6½ ..	3	8
3½ in. „ „ ..	4	5 ..	3	0 ..	4	3½
4 in. „ „ ..	4	10 ..	3	6 ..	5	3

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 7s. 7d. .. 5 in.. 9s. 2d. .. 6 in.. 10s. 9d.

Per ton in London.

IRON—	£	s.	d.		£	s.	d.
Common Bars	16	10	0	to	17	0	0
Staffordshire Crown Bars - good merchant quality	17	0	0	..	17	10	0
Staffordshire "Marked Bars"	18	0	0	..	19	0	0
Mild Steel Bars	21	0	0	..	21	10	0
Steel Bars, Ferro-Concrete quality, basis price ..	19	10	0	..	20	0	0
Hoop Iron, basis price ..	20	10	0	..	21	10	0
„ „ Galvanised ..	33	0	0	..	—		
Sheet Iron Black—							
Ordinary sizes to 20 g. ..	23	0	0	..	23	10	0
„ „ 24 g. ..	24	0	0	..	24	10	0
„ „ 26 g. ..	25	0	0	..	26	0	0
Sheet Iron, Galvanised flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g. ..	34	0	0	..	—		
Ordinary sizes to 22 g. and 24 g.....	34	0	0	..	34	10	0
Ordinary sizes to 26 g. ..	36	0	0	..	36	10	0

METALS (*Continued*).

	Per ton in London. £	s	d.		£	s.	d.
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g. ..	35	10	0	..	—		
„ „ 22 g. and 24 g.	36	0	0	..	—		
Ordinary sizes to 26 g. ..	39	0	0	..	—		
Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 8 ft. 20 g.....	33	0	0	..	Nominal prices only.		
Ordinary sizes, 22 g. and 24 g.....	33	10	0	..			
Ordinary sizes, 26 g.	32	10	0	..			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker.....	24	10	0	..	—		
Best Soft Steel Sheets, 20 g. and 24 g.....	24	15	0	..	—		
Best Soft Steel Sheets, 26 g.	26	10	0	..	—		
Cut Nails, 3 in. to 6 in.	29	0	0	..	30	0	0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Delivered in London. £	s.	d.		
LEAD—Sheet, English, 4 lb. and up	40	0	0	..	—
Pipe in coils	40	10	0	..	—
Soil Pipe	43	10	0	..	—
Compo pipe	44	10	0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

COPPER—					
Strong Sheet	per lb.	0	2	3	Class A certificate required for all Copper, Tin and Solder purchases.
Thin „	„	0	2	4	
Copper nails	„	0	2	3	
Copper wire	„	0	2	4	
TIN—English Ingots	„	0	3	9	
SOLDER—Plumbers'	„	0	1	10	
Tinmen's.....	„	0	2	4	
Blowpipe	„	0	2	8	

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	7d.	32 oz. fourths	10d.
„ thirds	7½d.	„ thirds	11d.
21 „ fourths	8d.	Fluted, Obscured and Enamelled Sheet,	
„ thirds	8½d.		
26 „ fourths	9d.	15 oz.	7½d.
„ thirds	9½d.	21 „	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	5½d.
⅜ Rough rolled and rough cast plate.....	6d.
½ Rough rolled and rough cast plate.....	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	6d.
White Rolled Cathedral.....	6d.
Tinted do.	6½d.

PAINTS, &c.

		£	s.	d.
Raw Linseed Oil in pipes.....	per gallon	0	8	0
„ „ „ in barrels	„	0	8	4
„ „ „ in drums	„	0	8	7
Boiled „ „ in barrels	„	0	8	7
„ „ „ in drums	„	0	9	0

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1

Turpentine in barrels	„	0	11	0
„ in drums	„	0	11	3
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		60	10	0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots..per ton delivered		83	10	0
Red Lead, Dry (packages extra) ..	per ton	47	0	0

Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty	per cwt.	1	6	0
Filocol.....	per cwt.	1	0	6

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak	0	16	0
Pale Copal Oak	0	17	0
Superfine Pale Elastic Oak.....	0	18	0
Fine Extra Hard Church Oak	0	18	0
Superfine Hard-drying Oak, for seats of Churches	1	1	0
Superfine Pale Elastic Carriage	1	1	0
Fine Pale Maple	0	14	0
Finest Pale Durable Copal.....	1	5	0
Extra Pale French Oil	1	4	0
Eggshell Flatting.....	1	0	0
White Pale Enamel	1	6	0
Extra Pale Paper.....	0	16	0
Best Japan Gold Size	0	12	0
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	12	0
Brunswick Black	0	19	0
Berlin Black.....	0	16	0
Knotting	1	10	0
French and Brush Polish	1	0	0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

Competitions, Contracts, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number Contracts iv; Competitions —; Public Appointments xxiv; Sales by Auction xxvi. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

BUILDING AND PAINTING.

NOVEMBER 1.—**Thornhill.**—ADDITIONS.—For builders' work in connection with additions to Berr Farm, Sanquhar. Plans at the Estate Office, Thornhill, Dumfriesshire.

NOVEMBER 1.—**Doonesky.**—ADDITIONS.— Tenders are invited for extensions to the Terelton Creamery, near Doonesky, co. Cork. Plans of Mr. B. O'Flynn, South Mall, Cork.

NOVEMBER 2.—**Sheffield.**—PAINTING.—The Sheffield Board of Guardians invite tenders for inside painting and whitewashing at "D" Block at Firvale House, Sheffield. Specification of the Clerk of Works, Firvale House, Sheffield.

FURNITURE, MATERIALS, etc.

NOVEMBER 8.—**London.**—MATERIALS.—The Commissioners of His Majesty's Works, &c., invite tenders for the supply of—(a) tin and sheet metalware, (b) enamelware. Forms of tender, &c., of the Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W. 1.

*NOVEMBER 22. — **Newtown.** — SHELVING. — The Education Committee of Newtown invite tenders for supply of shelving for 6,000 books for Montgomeryshire Village Circulating Library. Plan and specification can be obtained on application to Llewelyn Phllips, Clerk to Education Committee, County Offices, Newtown.

ROAD, SANITARY, AND WATER WORKS.

NOVEMBER 11.—**London.**—SANITARY.—The London County Council invite tenders for the collection, removal and disposal of sewage and other refuse from the conduits of the Council's tramways, and of dust, rubbish, &c., from tramway depots during the twelve (and alternatively six) calendar months commencing January 22, 1919. Form of tender from the General Manager, London County Council Tramways, 23, Belvedere-road, Lambeth, S.E. 1.

Auction Sales.

*NOVEMBER 5.—**London.**—Messrs. Skelding & Co. will sell, by order of Messrs. Leslie & Co., builders' and contractors' plant, machinery and stock at the depot, No. 15, Pennard-road, Shepherd's Bush, W. On view Monday next. Auction offices, 48, Gresham-street, Guildhall, E.C. 2

*NOVEMBER 13.—**London.**—Messrs. Douglas Young & Co. (in conjunction with Messrs. Saunders & Taylor), will sell at the Mart, E.C., the Freehold site of Layton House, Kew Bridge-road. Auctioneers' Offices, 51, Coleman-street, E.C. 2, and 213, Clapham-road, S.W. 9

Public Appointment.

*NOVEMBER 11.—**Grays.**—The Grays U.D.C. invite applications for post of architectural assistant to the Surveyor. Salary £200 to £250 per annum. Particulars may be obtained from Mr. Arthur C. James, Surveyor to the Council, District Council Offices, Grays, to whom applications should be sent.

PATENTS.

APPLICATIONS PUBLISHED.*

118,974.—W. Coackley: Fittings for use in glazing roof and like structures.

118,975.—P. Grounds and T. J. Shaw: Hoisting apparatus.

119,044.—E. Rings (executrix of F. L. Rings): Girders for reinforced concrete work.

119,045.—E. Rings (executrix of F. L. Rings): Reinforced blockwork floors, roofs, and the like.

119,067.—J. B. Morgan: Domestic and other fire-grates.

119,083.—W. Lindley: Apparatus for driving tunnels, headings, and the like.

119,087.—W. H. Kenyon and W. Smith: Stepped brick for the walls of buildings and acid plants.

119,116.—J. W. White: Securing guy ropes and like tension ropes or cables.

119,148.—F. W. Campbell: Concrete piles.

119,152.—A. T. O. Quick: Composition and manufacture of bricks, slabs, columns, and the like, and structures erected therewith.

British Industries Fair, 1919.

For next year's British Industries Fair the Board of Trade have again been able to secure from the Port of London Authority the great warehouses in Pennington-street. The fair will open as usual on the last Monday in February, and will remain open until Friday, March 7th. In order in no way to interfere with the production of munitions, the fair will again be restricted to the same trades which have participated in the last three fairs:—namely, glass and pottery; paper, printing and stationery; fancy goods, toys. Over 2,000 forms of application for space have already been issued to manufacturers in the trades concerned. Last year orders to the value of over a million and a-half were placed. Application forms can be obtained from the Director, British Industries Fair, Board of Trade, 10, Basinghall-street, London, E.C. 2.

*** All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.**

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday.*

*** Denotes *accepted.* † Denotes *provisionally accepted.* ‡ Denotes *recommended for acceptance.***

LONDON.—For fitting up of national kitchens at Upper Kennington-lane, for the Lambeth B.C.:—

*J. Parsons—Builders' Work ..	£237 0 0
*Falkirk Iron Co., Ltd.—Equipment	£418 5 0

FOR HEATING ENGINEERING SHOPS FACTORIES DRYING STOVES INDUSTRIAL BUILDINGS

ARTHUR ROBERTS, M.I.H.V.E.
HEATING & VENTILATING ENGINEER
WEST DERBY—LIVERPOOL.
ROBERTS' PATENTED SPECIALITIES.
"MERSEY" BOILER & DUAL CONTROL BOILER
TWIN TUBE TENSION VENTILATING GEAR

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. G. F. Glenn), Office, Moorgate Station Chambers, Moorfields, E.C. 2—The best and cheapest materials for dampcourses, railway arches, warehouse floors, flat roofs, stables, cowsheds and milk-rooms, granaries, tun-rooms and terraces. Asphalte Contractors to Forth Bridge Co.

J. J. ETRIDGE, Jr. SLATE MERCHANTS, LTD.
EXPERTS IN
SLATING, TILING.
STRIPPING AND RELAYING.
Telephone: Avenue 4848 (two lines), or write
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

OGILVIE & CO., Telephone: DALSTON 1388
Many years connected with the late firm of W. H. LASCELLES & Co., of Bunhill Row.
Mildmay Works, Mildmay Avenue, Islington, N.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

BUILDINGS STEAM CLEANED.
Improved Process. No Injury to the Fabric.
THE STEAM CLEANING CORPORATION,
9a, LITTLE JAMES ST., GRAY'S INN, LONDON, W.C. 1
Proprietors: The Stone Preservation Co., Ltd.

W. W. HOWARD BROS & Co
38 TRINITY SQUARE EC3
Sole Agents for UK & Europe for
WESTERN AUSTRALIAN GOVT
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